UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

IN RE:	:	
	:	17-MD-2767 (PAE)
MIRENA IUS LEVONORGESTREL-RELATED PRODUCTS LIABILITY LITIGATION (NO. II)	:	17-MC-2767 (PAE)
	:	OPINION & ORDER
This Document Relates to All Actions	:	

PAUL A. ENGELMAYER, District Judge:

This multi-district products liability litigation involves a contraceptive product: the Mirena intrauterine device ("IUD") developed, manufactured, and distributed by defendants Bayer HealthCare Pharmaceuticals, Inc., Bayer Pharma AG and Bayer Oy (together, "Bayer"). The Mirena IUD is implanted in the uterus and functions by releasing a synthetic steroid hormone known as levonorgestrel ("LNG"). Plaintiffs claim that the hormonal component of Mirena caused them to suffer from a disease known as idiopathic intracranial hypertension ("IIH"), also known as pseudotumor cerebri ("PTC"). IIH is an uncommon disease marked by increased cerebrospinal fluid ("CSF") pressure in the skull.

This decision resolves a defense motion for entry of summary judgment based on the limited issue of general causation. Bayer disputes that there is competent evidence to establish that the use of Mirena is a cause of IIH. And this Court, heeding the guidance of the United States Judicial Panel on Multi-District Litigation ("JPML"), prioritized discovery on that question: whether Mirena's release of LNG is capable of causing IIH. On October 24, 2018, with fact and expert discovery complete on that issue, the Court granted defense motions under *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), to exclude plaintiffs' seven

expert witnesses on general causation. Dkt. 320.[1] Each had proposed to opine that use of Mirena can cause IIH. *See In re Mirena IUS Levonorgestrel-Related Products Liability Litigation* (No. II), 341 F. Supp. 3d 213 (S.D.N.Y. 2018) ("*Mirena IIH/Daubert*"). That ruling left plaintiffs without any expert evidence as to general causation.

After the *Daubert* ruling, with leave of the Court, Bayer filed the present motion for summary judgment. Bayer argues that plaintiffs lack evidence sufficient to establish general causation, and that such is fatal to their claims. Bayer argues, first, as a categorical matter, that expert testimony is required to establish general causation in a products liability case involving a pharmaceutical product such as Mirena. Alternatively, Bayer argues that even if lay testimony (e.g., admissions by a product's manufacturer) could in theory establish general causation, the non-expert evidence in the record of this case is insufficient to so establish. Plaintiffs counter with a range of arguments, including that general causation is not a required element of proof, that expert evidence is not required to establish general causation, that a factfinder considering together disparate elements of non-expert evidence could reliably find general causation by Mirena of IIH, and that granting Bayer summary judgment on this element—with discovery not having been taken as to the individual cases of the approximately 920 plaintiffs comprising this MDL—would violate the Seventh Amendment and be unconstitutional.

For the reasons that follow, the Court grants Bayer's motion for summary judgment.

I. Pertinent History of This Litigation

The Court incorporates by reference its decision on the *Daubert* motions, which sets out the background to plaintiffs' claims, and the procedural history of this litigation, in considerable

[1] All citations to docket entries refer to the docket in case No. 17-md-2767, the lead case in this matter.

detail. *See Mirena IIH/Daubert*, 341 F. Supp. 3d at 218–38. The Court here supplies—including by reproducing, at points, modified excerpts of that decision's chronicle of the case history—the limited background necessary for understanding the instant motion.

A. The JPML's Centralization of Mirena/IIH Cases Before This Court

On April 6, 2017, the JPML centralized in this District pretrial proceedings in the 113 cases then pending across 17 districts nationwide in which plaintiffs had alleged IIH injuries caused by the hormonal component of the Mirena IUD. Most of these cases were at a relatively early stage of discovery or at the pleading stage, although fact and expert discovery had closed in the 10 longest pending actions. *See generally* Dkt. 1 at 2–3 (JPML Transfer Order). The JPML had earlier, in July 2014, denied a motion to centralize the Mirena/IIH actions, at a time when nine such actions, spanning six districts, were pending. Explaining, in 2017, its decision to centralize the pending cases, the JPML emphasized several factors that made centralized proceedings more efficient. Two are relevant here.

First, the JPML noted the heightened difficulty coordinating discovery and other pretrial proceedings given the increased number and dispersal of pending actions and of participating law firms. *Id*. at 2. "The record," the JPML stated, "demonstrates that centralization is necessary to facilitate the efficient conduct of common discovery." *Id*. at 3.

Second, general causation had emerged as an important issue common to all proceedings. "[T]he records in the many actions filed since [2014] demonstrate that discovery and pretrial motions concerning the issue of general causation have been, or will be, at the center of all actions—that is, whether the hormonal component in Mirena is capable of causing intracranial hypertension." Dkt. 1 at 3; *see also id*. at 4 ("Issues concerning general causation [and] the background science . . . will be common to all actions.").

B. Organization of This MDL

In overseeing this action, this Court has given priority to the matters that led the JPML to centralize the Mirena/IIH actions.

Specifically, on June 21, 2017, after appointing plaintiffs' leadership team and reviewing written submissions and eliciting counsel's input at an initial conference, *see generally* Dkt. 51 (transcript of June 13, 2017 hearing), the Court issued an order stating that priority would be given to: (1) "the process of providing common fact discovery to plaintiffs from Bayer," and (2) "resolving whether plaintiffs have admissible evidence sufficient to establish general causation" by Mirena of IIH. Dkt. 40 at 1 (June 21, 2017 Order). The Court has done so as follows.

Outgoing discovery from Bayer: On July 27, 2017, after receiving submissions delineating the 14 discovery disputes identified by the parties and inquiring about them at a hearing, the Court resolved these disputes in a series of bench rulings. *See generally* Dkt. 51 at 10–59 (transcript of July 27, 2017 hearing). The Court ordered that Bayer broadly produce written discovery on all common issues, including electronic records from more than 50 Bayer custodians, and including broad production from Bayer's adverse-events database. Both as to custodians and as to search parameters, the common discovery ordered from Bayer extended well beyond the parameters then used in the individual cases comprising the MDL. It also substantially exceeded the discovery that Bayer had produced in an immediately prior MDL also relating to the Mirena IUD. *See* MDL No. 2434 (the "Perforation MDL"). In that case, overseen by the Hon. Cathy Seibel of this District, the plaintiffs had alleged different injuries: that the hormone-release feature of Mirena had caused the IUD to migrate within the uterus after its insertion, leading to uterine perforation and related migration injuries.

General causation: The Court directed that the issue of general causation be litigated in the MDL as a threshold issue. To facilitate that issue's prompt resolution, the Court ordered that all fact discovery relating to general causation—including all document and deposition discovery—be completed by December 8, 2017. Dkt. 62. Alerted by counsel that each side expected to make *Daubert* challenges to the admissibility of each other's experts on general causation, the Court set deadlines spanning late December 2017 through late March 2018 for the submission of all expert reports on general causation, depositions of general causation experts, and reciprocal *Daubert* briefing. The Court set for the week of April 9, 2018 a "Science Day" tutorial for the Court on the background scientific issues in the case, followed by a *Daubert* hearing as to expert testimony on general causation. *Id*.

In prioritizing general causation, the Court was informed by, in addition to the guidance of the JPML, the representations of counsel in this case that the issue of general causation would be common and identical to all potential Mirena/IIH plaintiffs so as to make it an appropriate issue for this transferee court to resolve at the threshold. *See, e.g.*, Dkt. 51 at 29. The Court was also informed by the experience of the Perforation MDL. There, Judge Seibel held that plaintiffs' proposed expert testimony as to the general causation proposition at issue—that the Mirena IUD's release of the hormone LNG was capable of causing the Mirena IUD to migrate after insertion and cause uterine perforation—was not reliable under *Daubert*. *See In re Mirena IUD Prods. Liab. Litig*., 169 F. Supp. 3d 396, 427–61 (S.D.N.Y. 2016) ("*Mirena Perforation/ Daubert*"). Based on that ruling, Judge Seibel later granted summary judgment for Bayer on all claims, holding that, without any admissible expert testimony, the remaining evidence was insufficient to establish general causation. *See In re Mirena IUD Products Liab. Litig.*, 202 F. Supp. 3d 304, 310–28 (S.D.N.Y. 2016) ("*Mirena Perforation/SJ*"). The Second Circuit

affirmed. *See generally* 713 F. App'x. 11 (2d Cir. 2017). The possibility of a similar outcome here, this Court determined, counseled deferring other time- and cost-intensive phases of this litigation pending resolution of the anticipated *Daubert* motions.

C. The *Daubert* Motions as to General Causation Experts

Plaintiffs proposed to call seven expert witnesses as to general causation. Each opined that using the Mirena IUD can cause a woman to develop IIH. The seven experts were: (1) Dr. Lemuel A. Moyé, an epidemiologist; (2) Dr. Laura M. Plunkett, a pharmacologist and toxicologist; (3) Dr. James M. Wheeler, an OB/GYN; (4) Dr. Frederick W. Fraunfelder, an ophthalmologist; (5) Dr. Philip Darney, an OB/GYN; (6) Dr. Conrad E. Johanson, a neuroscientist; and (7) Dr. Vincent Salpietro, a pediatric neurologist. Bayer, in turn, proposed to call 12 expert witnesses. Each opined that existing evidence and scholarship does not permit this conclusion.

Each expert authored a report and was deposed. Each side thereafter moved to exclude the others' experts. Each of the combined 19 experts was the subject of individualized *Daubert* briefing and oral argument.

D. The Court's Ruling

On October 24, 2018, the Court issued a lengthy (156-page) decision excluding plaintiffs' seven expert witnesses. For each witness, the Court analyzed in detail the witness's stated bases for claiming general causation of IIH by Mirena and evaluated the witness' methodology against the standards set by *Daubert* and its progeny. While a top-line summary inherently is incapable of capturing the Court's witness-specific analyses, the following brief overview is provided with the goal of enabling understanding of arguments made on summary judgment.

Characteristics of Mirena: The Court began by reviewing salient characteristics of Mirena, an IUD that releases LNG, a synthetic progestin. Mirena was approved by the FDA in 2000; some 45.4 million Mirena devices have been inserted worldwide, equating to 142 woman-years of use. In contrast to combined oral contraceptives, which contain progestin and estrogen and whose effectiveness among obese women has been questioned, Mirena is believed to be effective among obese women. Also commending its use among obese women, studies indicate that Mirena does not increase the risk of weight loss and blood clots and does not expose the user to potential risks associated with estrogen-containing contraceptives. 341 F. Supp. 3d at 221. As a result of these and other factors, the Court noted, Mirena is widely believed to be preferentially, *i.e.*, disproportionately, prescribed to overweight and obese women. *Id*. at 222.

LNG: The Court next summarized LNG, the hormone Mirena releases. It mimics the effects of the naturally occurring sex hormone progesterone. LNG is widely used in gynecology, with a primary use in numerous contraceptives. These uses include LNG-releasing IUDs like Mirena; LNG-releasing subdermal implants such as Norplant, which was marketed in the United States from 1991 to 2002, and Jadelle, which is currently marketed in Europe; the single-dose hormone contraceptive known as Plan B; and as the progestin component of numerous combined oral contraceptives (which usually contain both LNG and an estrogen component). *Id*.

IIH: The Court next reviewed IIH. It is a rare disease marked by intracranial pressure derived not from a tumor or lesion but from the excessive buildup of CSF. The Court noted that IIH is more likely to afflict obese or overweight women, and that scholars are divided as to the cause of IIH, with some theorizing that IIH is caused by an increase in the production of CSF, but a greater number theorizing that IIH is caused by the impaired absorption of CSF. *Id*. at 223–24. Symptoms of IIH most commonly entail headaches, a whooshing sound in the ears

called pulsatile tinnitus, or papilledemia (the swelling of the optic nerves). In more severe cases, people with IIH can experience vision loss or even blindness. *Id*. IIH is diagnosed by exclusion. IIH occurs with a frequency of about one case per year in a population of 100,000. It occurs about 20 times more often among obese or overweight women of child-bearing age. *Id*. at 224–26. Treatment centers on weight loss; doctors prescribe weight-loss medications including diuretics. In more severe cases, lumbar punctures are used to drain excess CSF. *Id*. at 225.

Existing scholarship—the Etminan and Valenzuela epidemiological studies: The Court then reviewed in detail existing scholarship as to the question whether use of Mirena is a cause of IIH, as well as other writings bearing on the subject. The Court did so because plaintiffs' seven experts, to varying degrees, drew on this literature in their reports. "[O]utside of this litigation," the Court summarized, "no medical organization, regulatory agency, article in peer-reviewed scientific literature, or other research has found that use of Mirena is a cause of IIH." *Id*. at 226.

The Court noted that two published epidemiological studies had addressed the possibility of a causal connection between the use of Mirena and IIH.

The first was by Mahyar Etminan. *See* Mayhar Etminan, et al., Risk of intracranial hypertension with intrauterine levonorgestrel, 6 Therapeutic Advances in Drug Safety 110 (2015) ("Etminan" or the "Etminan study"); *see also* 341 F. Supp. 3d at 226, 229–33. The Etminan study contained two parts. The first, a disproportionality analysis ("DPA") of adverse event reports on the FDA's Adverse Event Reporting System ("FAERS"), had originally concluded that the reporting-odds ratio as to IIH was higher for Mirena than for a comparison group consisting of all other drugs in the FAERS database. However, after his study came under methodological attack, Etminan repudiated this part of his study, admitting, *inter alia*, that he

had failed to adjust for age and gender and had failed to limit his comparator group to reproductive age females. Re-running his analysis, Etminan concluded, "intracranial hypertension and Mirena use are 'likely *not* related.'" 341 F. Supp. at 232 (emphasis added) (internal citation omitted). Etminan also belatedly disclosed that at the time of his study, he had been working as a retained expert for plaintiffs in the pre-*MDL Mirena/IIH* litigation. *Id*. at 229, 232 n.13. The second part of Etminan's study consisted of a retrospective cohort study. It did not find any difference in the risk of IIH between users of Mirena and users of two combination oral contraceptives that did not contain LNG. *Id*. at 230. Following his repudiation of his DPA study, Etminan wrote that "neither of the analyses in the article provide evidence that Mirena use increases the risk for intracranial hypertension." *Id*. at 233–34.

The second study was by Reuben M. Valenzuela. *See* Reuben M. Valenzuela, et al., An examination of the risk of pseudotumor cerebri among users of the levonogestrel intrauterine device, 41 Neuro-Opthalmology 192 (2019) ("Valenzuela" or the "Valenzuela study"). A retrospective case-control study, it addressed the risk of IIH among certain patients in Utah and Denmark. The Valenzuela study found a statistically significant correlation between a patient's use of an LNG-releasing IUD and the patient's having IIH. But the authors emphasized that they had not found causation of IIH by use of an IUD, but merely a correlation between the two. *See* 341 F. Supp. 3d at 234 ("'Our investigation does *not* indicate that an LNG-IU[D] [such as Mirena] can cause PTC.'" (emphasis in original)) (quoting Valenzuela at 2). The authors noted that the correlation may have occurred, among other reasons, because use of an LNG-IUD such as Mirena "is also associated with other established risk factors that are known to be associated with PTC (e.g., obesity and recent weight gain)." *Id*.

Case and adverse event reports: The Court next summarized two published case reports, one from 2010 and one from 2017. Each reviewed the experience of an individual patient who had used an LNG-based IUD and developed symptoms consistent, or asserted to be consistent, with IIH. *Id*. at 235; *see also id*. at 228 (reviewing expert testimony on case reports and noting that except in extremely rare circumstances, these are used to generate hypotheses, not to establish causation). The Court further noted that Bayer maintains "adverse event" reports in its pharmacovigilance database, has periodically conducted "signal analyses" as to Mirena and IIH, and had produced in discovery these reports and a summary of them that it had produced in 2017 to a German regulator. Of the 315 cases of adverse events in Bayer's database, most involved women who were obese or overweight and more than 60% were from plaintiffs who had filed lawsuits after December 2013. *Id*. at 235.

Studies of other LNG-based contraceptive devices: The Court next reviewed writings regarding other contraceptives using LNG. As to combined oral contraceptives (those containing both estrogen and progestin) and IIH, which contain a substantially higher amount of LNG (some 20 to 30 times more) than does Mirena, five epidemiological studies have been done. All failed to find a causal link; two of plaintiffs' experts acknowledged the science has largely disproven a link between IIH and combined oral contraceptives. *Id*. at 236. As to Norplant, an LNG-releasing implant in use in the 1990s and early 2000s, there had been case reports of women who developed IIH while using Norplant; in 1993, these prompted the manufacturer voluntarily to place language on Norplant's label disclosing the fact of "reports of [IIH] in NORPLANT SYSTEM users"; a similar warning remains today on Bayer's Jadelle product, an LNG-based implant not currently marketed in the United States. *Id*. at 237–38. But a study ("Wysowski & Green") that examined adverse event reports in the FDA's database found the

data inconclusive. It noted that all women in the database for whom weight data was available were either obese or overweight, and because these factors "are related to the occurrence of [IIH]," causation of the women's IIH by Norplant could not be determined, and "[e]pidemiological research (case control or cohort studies) would be required to determine if a causal association between Norplant and . . . [IIH] exists." *Id*. at 237. No such study of Norplant (or Jadelle), however, has ever been conducted. *Id*.

Overall state of existing research: Summarizing—as the backdrop for plaintiffs' experts' reports—the state of research as to whether Mirena can cause IIH, the Court wrote:

> The state of research outside of this litigation as to the general causation proposition here—that using the Mirena IUD can cause a woman to develop IIH—presents a challenge for an expert witness here who would so testify.
>
> As the above review reflects, to date, no prospective experiments have been undertaken that sought to address that question. Two epidemiological studies have examined that question but neither has found such causation. One such study, Etminan, has been retracted to the extent that it—based on its DPA analysis of reports in the FAERS database—had initially found an increased IIH risk among Mirena users. And the surviving half of the Etminan study (which compared Mirena with oral contraceptives) did not find any such increased risk. The other epidemiological study (Valenzuela) found a correlation between Mirena use and IIH. But it found only that. In language that warned against conflating correlation with causation, the Valenzuela study emphasized that its finding of such a correlation "does not indicate" that an LNG-based IUD such as Mirena is an "independent risk factor" for IIH. Rather, as Valenzuela recognized, alternative explanations for the correlation between Mirena and IIH are apparent—notably, the confounding factors of overweightness and obesity among reproductive-age women. As to the other contraceptive products using LNG, five studies of combined oral contraceptives have affirmatively found that these products, which contain notably higher amounts of LNG than Mirena, do not cause IIH. And no study has established a causal link between IIH and Norplant, which also contained substantially more LNG than Mirena.
>
> In the face of this assembled historical record, with no medical organization or regulator or peer-reviewed scientific literature having found that Mirena or any contraceptive product using LNG is a cause of IIH, an expert witness who would so opine as to Mirena necessarily would break new ground in this litigation.

Id. at 238–39.

Assessments of plaintiffs' expert witnesses: The Court then assessed the reports of plaintiffs' seven experts opining that the use of Mirena is a cause of IIH. None, the Court noted, reached this conclusion "through an experiment, laboratory work, or a new epidemiological study of his or her own." *Id*. at 239.

Instead, four experts—Drs. Moyé, Plunkett, Wheeler, and Fraunfelder—arrived at this result largely by drawing upon existing sources. "These include the Valenzuela study plus, depending on the witness, some or all of the following: the repudiated portion of the Etminan study; case reports regarding Mirena; case reports regarding Norplant and other subdural implants; and Norplant's warning label. These experts also draw upon a newly available source of data: the case reports regarding Mirena first added in Bayer's 2017 signal investigation, which was made available to plaintiffs in discovery. To varying degrees, each of these four experts also articulates a theory as to a biological mechanism by which Mirena might cause IIH." *Id*. at 239. Examining each's report separately and at length, the Court found that the methodology of each witness fell short of *Daubert*'s requirement of methodological reliability. *See id*. at 239–42 (reviewing *Daubert* case law); *id*. at 242–53 (*Daubert* analysis as to report of Dr. Moyé); *id*. at 253–63 (*Daubert* analysis as to report of Dr. Plunkett); *id*. at 263–71 (*Daubert* analysis as to report of Dr. Wheeler); *id*. at 271–78 (*Daubert* analysis as to report of Dr. Fraunfelder).

Plaintiffs' remaining three expert witnesses (Drs. Darney, Johanson, and Salpietro) were predominantly "mechanism" experts. Their reports each developed a thesis as to how, biologically, use of Mirena may cause IIH. The Court found the methodology of these experts, too, to fall short of *Daubert*'s standards. *See id*. at 278–89 (*Daubert* analysis as to report of Dr. Darney); *id*. at 278–89 (*Daubert* analysis as to report of Dr. Johanson); *id*. at 289–305 (*Daubert* analysis as to report of Dr. Salpietro).

In light of the exclusion of the general-causation testimony of all of plaintiffs' expert witnesses, the Court elected not to resolve plaintiffs' motions to exclude the testimony of Bayer's responsive general causation experts. Rather, the Court stated, it anticipated that the litigation, tracking the Perforation MDL, would likely next move to a defense motion for summary judgment on the issue of general causation. The Court accordingly denied as potentially moot, and without prejudice, plaintiffs' *Daubert* motions aimed at Bayer's general causation experts. *Id*. at 305.

E. Bayer's Present Motion for Summary Judgment

Following the *Daubert* ruling, the Court directed counsel to confer as to next steps in the case, including whether, as in the Perforation MDL, to proceed to summary judgment on the limited issue of general causation. Dkt. 321. After receiving the parties' views, Dkt. 322, the Court decided on that course and, on November 19, 2018, set a briefing schedule, with Bayer's opening brief in support of summary judgment due in December. Dkt. 325.

The Court recognized that, in the absence of expert evidence, plaintiffs might argue—as plaintiffs in the Perforation MDL had in opposing summary judgment after Judge Seibel's adverse *Daubert* ruling—that there had been admissions by Bayer that established general causation by Mirena of the condition at issue (here, IIH). Accordingly, to facilitate informed briefing, the Court directed plaintiffs' counsel to file, by December 3, 2018, a letter "identifying the alleged admissions as to general causation, made by Bayer or its experts, on which plaintiffs intend to rely in opposing summary judgment." Dkt. 325 (Order of November 19, 2018). The Court emphasized that plaintiffs' letter "will not limit the range of materials on which plaintiffs may rely in their briefing," but stated its expectation that plaintiffs would "make a good-faith effort to thoroughly canvas the materials and disclose, with specificity, the evidence on which

they expect to rely in opposing a motion for summary judgment." *Id*. On December 3, 2018, plaintiffs filed such a letter. Dkt. 326.

On December 14, 2018, Bayer filed its motion for summary judgment, Dkt. 328, and, in support, a memorandum of law, Dkt. 329 ("Bayer Mem."), the declaration of Paul W. Schmidt, Dkt. 331 ("Schmidt Decl.") and accompanying exhibits, and a Rule 56.1 statement, Dkt. 332, ("Bayer 56.1").

On January 18, 2019, plaintiffs filed a memorandum of law in opposition to Bayer's motion, Dkt. 333 ("Pl. Mem."), an opposition to Bayer's Rule 56.1 statement and counter statement of facts, Dkt. 334 ("Pl. 56.1"), and a document styled as a declaration pursuant to Federal Rule of Civil Procedure 56(d) in opposition to Bayer's motion for summary judgment, Dkt. 335.

On February 11, 2019, Bayer submitted a reply memorandum of law in support of its motion, Dkt. 340 ("Bayer Reply"), an opposition to plaintiffs' Rule 56.1 statement, Dkt. 341, and a response to plaintiffs' Rule 56(d) declaration, Dkt. 342.

II. Discussion

The Court's resolution of Bayer's *Daubert* motions has left plaintiffs without any expert testimony as to general causation, to wit, that Mirena can cause IIH. Bayer therefore moves for summary judgment.

Bayer makes three arguments. First, it argues, summary judgment for the defense in a pharmaceutical product liability case is, categorically, required where the plaintiff lacks expert evidence as to general causation. Second, it argues, to the extent the case law leaves open the theoretical alternative in which corporate admissions of general causation can substitute for expert evidence, plaintiffs lack any such admissions here. Third, Bayer argues, the alternative

non-expert materials on which plaintiffs rely in opposing summary judgment (e.g., adverse event reports; the label on a different contraceptive product, Jadelle; inferences drawn from scientific literature largely addressed by plaintiffs' experts in their excluded reports; theories of possible biological mechanisms of causation; and regulatory documents) cannot support a finding of general causation. Bayer argues that, in seeking to base general causation on these materials, plaintiffs improperly seek to substitute the arguments and inferences of counsel for the expert evidence (or corporate admissions) that are required.

Plaintiffs counter with a series of arguments. First, they argue, general causation is not a required element of the state-law causes of action on which plaintiffs in this MDL have sued. An individual plaintiff may prevail as to the element of causation they argue, solely by means of individual (*i.e.*, plaintiff-specific) causation, a subject as to which there has not been discovery. Second, plaintiffs argue, other forms of evidence, taken together, could permissibly lead a factfinder to find general causation of IIH by Mirena. These building blocks include alleged admissions by Bayer, components of the witness reports by Bayer's and plaintiffs' experts; portions of the Valenzuela study; adverse event reports; viable theories of a biological mechanism by which Mirena might cause IIH; and statements by the FDA. Taken together, plaintiffs argue, these materials give rise to a material dispute of fact as to general causation. Fourth, plaintiffs argue, the Court procedurally erred in directing plaintiffs, prior to Bayer's filing of its summary judgment motion, informally to identify the purported admissions by Bayer on which plaintiffs then anticipated relying. Fifth and finally, plaintiffs claim that granting summary judgment to Bayer on the issue of general causation, without any discovery having been taken as to individual plaintiffs, is unconstitutional—a breach of the Seventh Amendment.

The Court addresses these arguments in turn, after first reviewing the governing legal standards.

A. Applicable Legal Standards

The Court's review of Bayer's motion has been governed by familiar standards. As movant, Bayer must show, on one or more required elements of plaintiffs' claims, "that there is no genuine dispute as to any material fact and [that it] is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). The movant bears the burden of demonstrating the absence of a question of material fact. In making this determination, the Court must view all facts "in the light most favorable" to plaintiffs, as the non-moving parties. *Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986); *see also Holcomb v. Iona Coll.*, 521 F.3d 130, 132 (2d Cir. 2008).

If the moving party meets its burden, the burden shifts to the nonmoving party to come forward with specific facts showing that there is a genuine issue for trial. A plaintiff must establish a genuine issue of fact by "citing to particular parts of materials in the record." Fed. R. Civ. P. 56(c)(1)(A); *see also Wright v. Goord*, 554 F.3d 255, 266 (2d Cir. 2009). Where a plaintiff cannot adduce proof sufficient to establish an essential element of her claim, there can be no genuine issue of material fact, because a "complete failure of proof concerning an essential element of the nonmoving party's case necessarily renders all other facts immaterial." *Celotex*, 477 U.S. at 322–23; *see also Silver v. City of New York*, 947 F.2d 1021, 1022 (2d Cir. 1991). A plaintiff "may not rely on mere speculation or conjecture as to the true nature of the facts to overcome a motion for summary judgment." *Hicks v. Baines*, 593 F.3d 159, 166 (2d Cir. 2010) (internal quotation marks and citation omitted). "Only disputes over facts that might affect the outcome of the suit under the governing law will preclude a grant of summary judgment." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). In determining whether there are

genuine issues of material fact, the Court is "'required to resolve all ambiguities and draw all permissible factual inferences in favor of the party against whom summary judgment is sought.'" *Johnson v. Killian*, 680 F.3d 234, 236 (2d Cir. 2012) (quoting *Terry v. Ashcroft*, 336 F.3d 128, 137 (2d Cir. 2003)).

B. The Requirement of Competent Evidence of General Causation

The Court considers first the parties' dispute whether, as Bayer argues and plaintiffs contest, a plaintiff in a products-liability case must establish general causation.

It is black-letter law that a plaintiff, seeking to prevail on a personal injury claim, must show causation, meaning that the defendant's conduct "was the proximate cause of [her] injuries." *Mirena Perforation/SJ*, 202 F. Supp. 3d at 310; *see also, e.g.*, *In re Bausch & Lomb Inc. Contact Lens Sol. Prods. Liab. Litig*., 693 F. Supp. 2d 515, 520 (D.S.C. 2010) ("[C]ausation is a required element in every products liability case."), *aff'd sub nom. Fernandez-Pineiro v. Bausch & Lomb, Inc.*, 429 F. App'x 249, 252–53 (4th Cir. 2011) (*per curiam*); *Luttrell v. Novartis Pharm. Corp.*, 894 F. Supp. 2d 1324, 1340 (E.D. Wash. 2012) (causation required in products liability case under Washington law); *Moran v. Pfizer, Inc.*, 160 F. Supp. 2d 508, 510–11 (S.D.N.Y. 2001) (causation required under New Jersey law).

Bayer argues that, in order to show causation, plaintiffs must produce evidence of both "general" and "specific" causation. Plaintiffs argue that Bayer has failed to articulate a clear definition of general causation. But the definition, as articulated in numerous products liability cases including the earlier Mirena MDL, is straightforward: "'General causation is whether a substance is capable of causing a particular injury or condition in the general population, while specific causation is whether a substance caused a particular individual's injury.'" *Mirena Perforation/Daubert*, 169 F. Supp. at 435 (quoting *In re Rezulin Prods. Liab. Litig.*, 369 F. Supp.

2d 398, 402 (S.D.N.Y. 2005)); *see also Amorgianos v. Nat'l R.R. Passenger Corp.*, 303 F.3d 256, 268 (2d Cir. 2002) (noting that New York law requires plaintiffs to "offer admissible expert testimony regarding both general causation, *i.e.*, that [product exposure] can cause the type of ailments from which [plaintiff] claims to suffer; and specific causation, *i.e.*, that [product exposure] actually caused [plaintiff's] alleged neurological problems"); *In re Gen. Motors LLC Ignition Switch Litig*., No. 15 Civ. 1626 (JMF), 2017 WL 6729295, at *7 (S.D.N.Y. Dec. 28, 2017) ("[A]bsent admissible evidence that [a theorized event] has occurred, or could occur, in real life (that is, evidence of general causation) there is no basis to opine that it caused a particular accident (that is, specific causation).").

Plaintiffs have not adduced any contrary case authority, *i.e.*, products liability cases disclaiming a need to prove general causation. Instead, plaintiffs, noting that the claims of the individual plaintiffs comprising this MDL arise under state law, fault Bayer for assertedly asking the Court to "graft a federal 'general causation' element onto state substantive tort law" that the pertinent state tort laws do not require. Pl. Mem. at 2. Plaintiffs are correct that the question presented is one of state law: Because the cases comprising this MDL are before the Court by virtue of diversity jurisdiction, the Court "appl[ies] state substantive law and federal procedural law." *Gasperini v. Ctr. for Humanities*, 518 U.S. 415, 427 (1996); *see also Zuchowicz v. United States*, 140 F.3d 381, 389 (2d Cir. 1998) ("In seeking to show both components of *but for* causation, plaintiff's reliance on experts must meet the substantive requirements of [state] law."). But plaintiffs' portrait of state law as absolving a products-liability plaintiff from a need to establish general causation—the capacity of the product in question to cause the injury alleged—is simply wrong. Indeed, this same faulty premise was rejected in the immediately prior Perforation MDL, also involving products liability claims involving Mirena arising under myriad

states' tort laws. There, Judge Seibel held, "[i]n a products liability action, plaintiffs must prove both general and specific causation," *Mirena Perforation/SJ*, 202 F. Supp. 3d at 308 n.11 (citing *Wells v. SmithKline Beecham Corp*., 601 F.3d 375, 377–78 (5th Cir. 2010)), and the Second Circuit affirmed. Indeed, the plaintiffs in the Perforation MDL did not dispute that "proof of general causation . . . is necessary" to show causation in such a products liability case. *Id*. at 308.

As Bayer has comprehensively demonstrated in its submissions to this Court on summary judgment, all relevant jurisdictions require some evidence of general causation in products liability cases involving complex products liability (or medical) issues.[2] *See, e.g.*, *Earl v.*

[2] As an appendix to its submissions in support of its motion for summary judgment, Bayer has supplied citations to hundreds of cases from the 53 jurisdictions it tallies as implicated by the approximately 920 cases comprising this MDL. *See* Dkt. 331-1 ("Appendix"). Bayer cites this authority to support both the argument addressed above, that general causation is an element of complex products liability tort claims, and its argument addressed *infra*, that general causation in such cases requires proof in the form of expert testimony. The Court has reviewed the cited authority, which includes cases from state courts and federal courts applying state law. The Court is persuaded that every jurisdiction requires a showing of general causation in cases, like this one, in which a plaintiff alleges that the use of a product gave rise, through a complex causal mechanism, to a medical injury or impairment. *See, e.g.*, *McClain v. Metabolife Intern., Inc.*, 401 F.3d 1233, 1239 (11th Cir. 2005) (Alabama); *Baker v. Baker Hughes Oilfield Operations, Inc*., No. 3:16-CV-00038, 2018 WL 3625834, at *5 (D. Alaska July 30, 2018) (Alaska); *Cloud v. Pfizer Inc.*, 198 F. Supp. 2d 1118, 1132 (D. Ariz. 2001) (Arizona); *Nat'l Bank of Commerce v. Associated Milk Producers, Inc*., 22 F. Supp. 2d 942, 949 (E.D. Ark. 1998) (Arkansas), *aff'd sub nom. Nat'l Bank of Commerce of El Dorado v. Associated Milk Producers, Inc*., 191 F.3d 858 (8th Cir. 1999); *Nelson v. Matrixx Initiatives, Inc*., 592 F. App'x 591, 592 (9th Cir. 2015) (California); *Norris v. Baxter Healthcare Corp.*, 397 F.3d 878, 886 (10th Cir. 2005) (Colorado); *Beyer v. Anchor Insulation Co*., 238 F. Supp. 3d 270, 294 (D. Conn. 2017) (Connecticut); *Scaife v. Astrazeneca LP*, No. CIV.A. 06C-04-218SER, 2009 WL 1610575, at *20 (Del. Super. June 9, 2009) (Delaware); *Arias v. DynCorp*, 928 F. Supp. 2d 1, 6, 9 (D.D.C. 2013) (District of Columbia); *In re Trasylol Prods. Liab. Litig.*, MDL-1928, No. 08-MD-1928, 2013 WL 1192300, at *5 (S.D. Fla. Mar. 22, 2013) (Florida); *Siharath v. Sandoz Pharms. Corp*., 131 F. Supp. 2d 1347, 1352 (N.D. Ga. 2001) (Georgia); *Forsyth v. Eli Lilly & Co*., No. CIV. 95-00185 ACK, 1998 WL 35152135, at *8 (D. Haw. Jan. 5, 1998) (Hawaii); *Earl v. Cryovac, A Div. of W.R. Grace Co*., 772 P.2d 725, 726 (Idaho Ct. App. 1989) (Idaho); *Lewis v. PDV Am., Inc*., 532 F. Supp. 2d 1006, 1010 (N.D. Ill 2008) (Illinois); *C.W. ex rel. Wood v. Textron, Inc*., 807 F.3d 827, 838 (7th Cir. 2015) (Indiana); *Ranes v. Adams Labs., Inc*., 778 N.W.2d 677, 688 (Iowa 2010)

Cryovac, 772 P.2d 725, 726 (Idaho Ct. App. 1989) ("If the product is alleged to be unsafe because it is toxic, the causation issue turns upon two subsidiary questions: (a) Did the product . . . have the capacity to cause the type of harm claimed by the plaintiff? (b) Was the plaintiff's

---

(Iowa); *Vanderwerf v. SmithKlineBeecham Corp.*, 529 F. Supp. 2d 1294, 1306 (D. Kan. 2008) (Kansas); *Hans v. Matrixx Initiatives, Inc.*, No. 3:04-CV-540, 2007 WL 2668594, at *3 (W.D. Ky. Sept. 6, 2007) (Kentucky); *Burst v. Shell Oil Co.*, No. 14-109, 2014 WL 3893304, at *2 (E.D. La. Aug. 8, 2014) (Louisiana); *Millett v. Atl. Richfield Co.*, No. Civ. A. CV-98-555, 2000 WL 359979, at *13 (Super. Ct. Maine Mar. 2, 2000) (Maine); *Sugarman v. Liles*, 190 A.3d 344, 353–54 (Ct. App. Md. 2018) (Maryland); *Milward v. Rust-Oleum Corp.*, 820 F.3d 469, 476 (1st Cir. 2016) (Massachusetts); *Schaendorf v. Consumers Energy Co.*, 2009 WL 563904, at *8 (Mich. Ct. App. Mar. 5, 2009) (Michigan); *In re Viagra Prods. Liab. Litig.*, 658 F. Supp. 2d 950, 968 (D. Minn. 2009) (Minnesota); *Watts v. Radiator Specialty Co.*, 990 So. 2d 143, 151 (Miss. 2008) (Mississippi); *Glastetter v. Novartis Pharm. Corp.*, 107 F. Supp. 2d 1015, 1045 (E.D. Mo. 2000), *aff'd*, 252 F.3d 986 (8th Cir. 2001) (Missouri); *Brumbaugh v. Sandoz Pharm. Corp.*, 77 F. Supp. 2d 1153, 1155 n.1 (D. Mont. 1999) (Montana); *Barrett v. Rhodia, Inc.*, 606 F.3d 975, 984 (8th Cir. 2010) (Nebraska); *Jernee v. Kennametal, Inc.*, No. 60653, 2015 WL 134767, at *1 (Nev. Jan. 8, 2015) (Nevada); *Grimes v. Hoffmann-LaRoche, Inc.*, 907 F. Supp. 33, 35 (D.N.H. 1995) (New Hampshire); *In re Phenylpropanolamine (PPA)*, 2003 WL 22417238, at *20 (N.J. Super. Ct. Law Div. July 21, 2003) (New Jersey); *Firstenberg v. Monribot*, 350 P.3d 1205, 1212 (N.M. Ct. App. 2015) (New Mexico); *Amorgianos*, 303 F.3d at 268 (New York); *Dunn v. Sandoz Pharm. Corp.*, 275 F. Supp. 2d 672, 676 (M.D.N.C. 2003) (North Carolina); *Anderson v. Hess Corp.*, 592 F. Supp. 2d 1174, 1178 (D.N.D. 2009) (North Dakota); *Valentine v. PPG Indus., Inc.*, 821 N.E.2d 580, 588 (Ohio Ct. App. 2004), *aff'd sub nom., Valentine v. Conrad*, 850 N.E.2d 683 (Ohio 2006) (Ohio); *Hollander v. Sandoz Pharm. Corp.*, 289 F.3d 1193, 1214 (10th Cir. 2002) (Oklahoma); *Phelps v. Wyeth, Inc.*, 938 F. Supp. 2d 1055, 1068 (D. Or. 2013) (Oregon); *Soldo v. Sandoz Pharm. Corp.*, 244 F. Supp. 2d 434, 524–25 (W.D. Pa. 2003) (Pennsylvania); *Velazquez v. Abbott Labs.*, 901 F. Supp. 2d 279, 293 (D.P.R. 2012) (Puerto Rico); *Mills v. State Sales, Inc.*, 824 A.2d 461, 468 (R.I. 2003) (Rhode Island); *In re Bausch & Lomb Inc. Contacts Lens Sol. Prods. Liab. Litig.*, 693 F. Supp. 2d at 518 (South Carolina); *Garrido v. Team Auto Sales, Inc.*, 913 N.W. 2d 95 (S.D. 2018) (South Dakota); *Alcoa, Inc. v. McCroskey*, No. E2018-00087-SC-R3-WC, 2018 WL 5619688, at *2 n.2 (Tenn. Oct. 30, 2018) (Tennessee); *Merrell Dow Pharm., Inc. v. Havner*, 953 S.W.2d 706, 714, 730 (Tex. 1997) (Texas); *Shipley v. Forest Labs., Inc.*, No. 1:06-CV00048-TC, 2015 WL 4199739, at *4 (D. Utah July 13, 2015) (Utah); *Blanchard v. Eli Lilly & Co.*, 207 F. Supp. 2d 308, 314, 322 (D. Vt. 2002) (Vermont); *Zellars v. NexTech Ne., LLC*, 895 F. Supp. 2d 734, 739 (E.D. Va. 2012), *aff'd* 533 F. App'x 192 (4th Cir. 2013) (Virginia); *Henricksen v. ConocoPhillips Co.*, 605 F. Supp. 2d 1142, 1177 (E.D. Wash. 2009) (Washington); *Meade v. Parsley*, No. 2:09-CV-00388, 2010 WL 4909435, at *5 n.5 (S.D. W. Va. Nov. 24, 2010) (West Virginia); *Schultz v. Glidden Co.*, No. 08-C-919, 2012 WL 968005, at *2 (E.D. Wis. Mar. 21, 2012), *aff'd in part, rev'd in part on other grounds sub nom. Schultz v. Akzo Nobel Paints, LLC*, 721 F.3d 426 (7th Cir. 2013) (Wisconsin); *Estates of Tobin by Tobin v. Smithkline Beecham Pharm.*, 164 F. Supp. 2d 1278, 1287 (D. Wyo. 2001) (Wyoming).

exposure sufficient to produce a toxic effect?"); *Reckis v. Johnson & Johnson*, 28 N.E.3d 445, 461 n.33 (Mass. 2015) ("Medical causation has two components, both of which require expert opinion evidence . . . general causation, *i.e.*, that the drug *can* cause the injury, and specific causation, *i.e.*, that the drug *did* cause the injury in this case." (citing *Kerlinsky v. Sandoz*, 783 F. Supp. 2d 236, 240 (D. Mass. 2011))); *In re New York City Asbestos Litig.*, 48 Misc. 3d 460, 473, 11 N.Y.S.3d 416, 426 (N.Y. Sup. Ct. 2015) (it is a "well-established requirement that an expert opinion on causation set forth a plaintiff's exposure to a toxin, that the toxin is capable of causing the particular illness (general causation) and that plaintiff was exposed to sufficient levels of the toxin to cause the illness (specific causation)").

Further, as the assembled case authority reflects, there is good reason for requiring such proof. As a federal district court in Ohio, supervising a products liability MDL in which the use of an anti-obesity medication was alleged to cause certain cardiovascular and cerebrovascular injuries, aptly observed, proof of general causation plays a vital role in complex cases where the capacity of a product to cause a species of injury is not intuitively obvious—where the causation inquiry "is more complicated because the injuries themselves are usually not immediately obvious and the connection between exposure and injury is not a matter of common sense or everyday experience." *In re Meridia Prods. Liab. Litig*., 328 F. Supp. 2d 791, 798 (N.D. Ohio 2004). To assure reliable outcomes in a circumstance where the origins of an injury are not obvious or within the scope of a lay juror's everyday experience, and to avoid the risk that juries would equate correlation (the fact that a given plaintiff used a product and developed injuries) with causation, it is imperative that the factfinder be presented evidence that the product was capable of causing the injury of which a plaintiff complains.

Tellingly, plaintiffs' bold present claim that the law does not require proof of general causation in cases such as this is of recent vintage. Plaintiffs only made that argument after the Court, in its October 2018 *Daubert* decision, excluded plaintiffs' proposed expert witnesses on general causation as unreliable. Plaintiffs earlier had effectively acknowledged the opposite. When plaintiffs asked the JPML to consolidate the pending cases in an MDL, for example, they stated that the foundational issue of general causation was common to all member cases and that this common issue supported consolidation of these cases for pretrial proceedings. *See* Dkt. 331-2 (Pl. Mot. for Transfer) at 7 (noting that plaintiffs all alleged that their "injuries were caused by levonorgestrel released from the Mirena LNG-IUS through the exact same mechanism of action" and representing "there are common questions of science that will be presented in each of these cases"). Heeding this point, the JPML determined that "[i]ssues concerning *general causation*, the background science, and Mirena's labeling and regulatory history with respect to the alleged injury will be common to all actions." Dkt. 1 at 4. Later, after consolidation, plaintiffs' counsel, in a letter to this Court, "agree[d] that 'general causation' refers to the question of whether or not Mirena can cause [IIH]." Dkt. 96 at 2. It was based on the JPML's guidance and the parties' identification of general causation as a gating issue that the Court, as noted, prioritized fact and expert discovery, and *Daubert* litigation, on this issue. Before the adverse *Daubert* ruling, plaintiffs had never suggested that it was unnecessary to show general causation.

The Court holds, therefore, that to withstand Bayer's motion for summary judgment, plaintiffs must produce admissible evidence from which a jury could reliably conclude that Mirena is capable of causing IIH.

Finally, as to this point, the Court rejects an argument by plaintiffs that is tantamount to a claim that proof of general causation is unnecessary. Plaintiffs argue that Bayer's motion for

summary judgment is premature because, although discovery as to general causation is closed, there has not yet been discovery as to the individualized circumstances of the approximately 920 plaintiffs. Plaintiffs represent that "[m]any Plaintiffs have had their own doctors determine, through differential diagnosis, that the Mirena was the cause of their intracranial hypertension and that other plaintiffs could obtain expert witness testimony of the same." Pl. Mem. at 18. The premises of this argument are that (1) general causation is not an element of plaintiffs' claims, and (2) the causation element could be established through the testimony of an individual patient's physician to the effect that, after excluding other potential causes for IIH symptoms, the doctor was left with the conclusion that the patient's Mirena use must be the cause.

There is of course a proper place for testimony about the causes of an individual plaintiff's symptoms. That is the essence of the *specific causation* inquiry undertaken if there is competent evidence of general causation. But plaintiffs' bid here to erase the threshold general causation requirement is at odds with the uniform holdings of the cases canvassed above that general and specific causation present separate inquiries, and that in complex medical products liability cases, the cause of an individual plaintiff's injuries is properly reached only where a plaintiff can first adduce competent evidence that the product is capable of causing the condition at issue. *See, e.g.*, *Norris v. Baxter Healthcare Corp.*, 397 F.3d 878, 887 (10th Cir. 2005) ("In concluding that Plaintiff's systemic injuries were a result of her silicone breast implants, Plaintiff's experts attempted to demonstrate specific causation without first demonstrating general causation . . . . [A]t best, silicone-associated connective tissue disease is an untested hypothesis . . . . Therefore, there is no scientific basis for any expert testimony as to its specific presence in Plaintiff."); *In re Rezulin*, 441 F. Supp. at 578 ("[E]vidence of specific causation is irrelevant without evidence of general causation." (citing *Ruggiero v. Warner-Lambert Co.*, 424

F.3d 249, 251 n.1 (2d Cir. 2005)); *Mirena Perforation/Daubert*, 169 F. Supp. at 436 n.29 ("[A] specific causation opinion must be based on a reliable general causation opinion . . . in cases involving [medical] devices."); *Soldo v. Sandoz Pharmas. Corp*., 244 F. Supp. 2d 434, 525 (W.D. Pa. 2003) ("If plaintiff has not demonstrated sufficiently reliable evidence of *general* causation, her claims fail and there is no need to consider *specific* causation."); *In re General Motors LLC*, 2017 WL 6729295, at *7 ("[A]bsent evidence of . . . general causation[] there is no basis to opine . . . [on] specific causation[]."). Plaintiffs may not elude the general causation requirement by proposing to use a physician's "differential diagnosis" of the individual patient as a general causation substitute. Nor could such a physician's opinion, based on an examination of a patient, qualify as a reliable judgment, consistent with *Daubert*, of the capacity of the product in question (here, Mirena) to cause the condition in question (here, IIH). *See Soldo*, 244 F. Supp. at 525 ("[T]he requirement of general causation as an aspect of a scientifically-reliable causation opinion is the very essence of *Daubert*," and the opinion of a plaintiff's physician, based on a differential diagnosis of that plaintiff, that a medical product caused the plaintiff's injuries, simply "cannot [be] reliabl[e].").

C. The Evidence That Plaintiffs Claim Can Establish General Causation

The Court accordingly turns to consider whether, with plaintiffs' expert testimony on general causation having been excluded as unreliable under *Daubert*, the evidence that plaintiffs have mustered is sufficient to establish general causation. At the threshold, the Court considers whether, as Bayer argues, a plaintiff is required to establish general causation in a medical products liability case such as this through expert testimony, or whether, as plaintiffs argue, alternative forms of evidence, for example, a corporate admission, can establish general causation. The Court declines to hold that expert testimony is categorically required. The Court

therefore considers whether the alternative evidence to which plaintiffs point here is sufficient to establish general causation. In considering these questions, the Court is mindful that these are questions of state law. As the Second Circuit emphasized in upholding the entry of summary judgment in the Mirena Perforation MDL, "state law controls on the question of what evidence is necessary to prove an element of a state law claim, such as general causation." *In re Mirena IUD Prods. Liab. Litig.*, 713 F. App'x 11, 15 (2d Cir. 2017).

1. Is Expert Testimony Required to Establish General Causation?

Bayer argues that expert testimony is legally *required* to prove general causation in medical products liability cases such as this, and therefore, here, that Mirena is capable of causing IIH. Thus, Bayer argues, because the Court has excluded plaintiffs' proposed general causation experts, the Court must enter summary judgment for the defense. Plaintiffs respond that the law does not rigidly require proof of general causation by expert testimony. And here, plaintiffs argue, general causation can be established through a collection of lay evidence. This largely consists of items on which plaintiffs' excluded experts relied: inferences drawn from scientific literature (e.g., the Valenzuela study); the label used on a different LNG-based contraceptive product, Jadelle; adverse event reports; theories of possible biological mechanisms of causation; and regulatory documents.

There is much force to Bayer's argument. It is well established that "expert testimony is required to establish causation" where the issue of causation is "beyond the knowledge of lay jurors." *Wills v. Amerada Hess Corp.*, 379 F.3d 32, 46 (2d Cir. 2004). Other courts, surveying the law of the 50 states and territories, have concluded that each jurisdiction typically adheres to this principle. *See, e.g.*, *Mirena Perforation/SJ*, 202 F. Supp. at 316 ("[A]ll jurisdictions" require expert testimony on issues "outside the realm of common knowledge and experience of a lay

juror."); *In re Lipitor Mktg., Sales Practices & Prod. Liab. Litig.*, 227 F. Supp. 3d 452, 469 (D.S.C. 2017) ("While the specific language used by courts varies to some degree, all jurisdictions require expert testimony at least where the issues are medically complex and outside common knowledge and lay experience."); *id.* at 469–77 (collecting cases).

To be sure, courts have applied this principle with sensitivity to the precise circumstances at hand. As a general proposition, expert testimony is not generally required in tort cases where a lay juror can "infer causation from common knowledge and lay experience"—such as when there is "an immediate onset of symptoms that naturally follow from an accident or a complete lack of any other possible cause." *In re Lipitor Litig.*, 227 F. Supp. 3d at 477; *see also, e.g.*, *Galloway v. Home Concrete Constr.*, 524 F. App'x 865, 872 (4th Cir. 2013) (Maryland law does not require plaintiff to prove causation by expert evidence "when she drank from a spigot and developed chemical burns in her mouth immediately thereafter").

However, as Judge Seibel observed in the preceding Mirena MDL, generally in products liability cases involving complex causation issues, including cases involving pharmaceuticals or medical devices, "'to establish causation, plaintiffs must offer admissible expert testimony regarding both general causation and specific causation.'" *Mirena Perforation/SJ*, 202 F. Supp. 3d at 310 (quoting *Amorgianos*, 303 F.3d at 268) (internal alterations omitted). There are many holdings in accord. *See, e.g.*, *Barnes v. Anderson*, 202 F.3d 150, 159 (2d Cir. 1999) ("[E]xpert medical opinion evidence is usually required to show the cause of an injury or disease because the medical effect on the human system of the infliction or injuries is generally not within the sphere of the common knowledge of the lay person." (internal alterations and quotation marks omitted)); *McClain v. Metabolife Int'l, Inc.*, 401 F.3d 1233, 1237 (11th Cir. 2005) (holding that "[p]laintiffs must prove the toxicity of [a product] and that it had a toxic effect on them causing

the injuries that they suffered," and that "[t]his type of proof requires expert testimony"); *In re Baycol Prods. Litig.*, 321 F. Supp. 2d 1118, 1126 (D. Minn. 2004) ("[P]ersonal injury cases involving pharmaceuticals, toxins or medical devices involve complex questions of medical causation beyond the understanding of a lay person."); *Hughes v. Stryker Sales Corp.*, No. 08 Civ. 655, 2010 WL 1961051, at *5 (S.D. Ala. May 13, 2010) ("In the typical cases involving a complex medical device, the absence of expert testimony would force a jury to engage in speculation and conjecture on issues of defect and causation. . . . Therefore, courts routinely require expert testimony in such matters."); *Wells v. SmithKline Beecham Corp.*, No. A-06-CA-126-LY, 2009 WL 564303, at *5 (W.D. Tex. Feb. 18, 2009) ("Evidence of general causation in a drug case must be established through expert testimony."), *aff'd*, 601 F.3d 375 (5th Cir. 2010).

Summary judgment is therefore commonly granted for the defense in pharmaceutical product liability or toxic tort cases where plaintiffs fail to adduce reliable expert testimony establishing general causation. *See, e.g.*, *C.W. ex rel. Wood v. Textron, Inc.*, 807 F.3d 827, 838 (7th Cir. 2015) ("With no experts to prove causation . . . the appellants cannot prove their toxic-tort case . . . [and] summary judgment was proper."); *In re Denture Cream Prod. Liab. Litig.*, 204 F. Supp. 3d 1348, 1352 (S.D. Fla. 2016) ("As the Court found the general causation expert reports submitted by the other MDL Plaintiffs inadequate in its *Daubert* Order . . . [r]emaining Plaintiffs have failed to prove general causation. Thus, . . . summary judgment is appropriate."); *In re Viagra Prods. Liab. Litig.*, 658 F. Supp. 2d 950, 956 (D. Minn. 2009) ("[A]bsent an admissible general causation [expert] opinion, Plaintiffs' claims necessarily fail and [defendant's] motion for summary judgment must be granted."); *In re Rezulin Prod. Liab. Litig.*, 441 F. Supp. 2d 567, 579 (S.D.N.Y. 2006) ("[P]laintiffs therefore have failed to provide admissible evidence of general or specific causation of silent liver injury. Without the necessary

and admissible expert evidence, there is no genuine issue of material fact as to causation, and summary judgment is appropriate."). This Court is unaware of any complex medical liability case in which, in the absence of expert evidence as to general causation, a plaintiff's claim has been sustained as viable.

In the end, however, courts—including, controlling here, the Second Circuit—have left open the possibility that, even in cases involving complex issues of whether a medical problem was the cause of a physical injury, lay evidence could possibly substitute for expert testimony. Such cases have given as an example of non-expert proof that could potentially establish general causation a corporate defendant's express admission that its product was capable of causing the condition at issue. *See In re Mirena IUD Prods. Liab. Litig.*, 713 F. App'x at 15 ("We need not reach the question of whether party admissions could ever substitute for expert testimony."); *In re Lipitor Mktg., Sales Practices & Prods. Liab. Litig. (No. II) MDL 2502*, 892 F.3d 624, 647 (4th Cir. 2018) ("*In re Lipitor*") ("There may be cases involving complex issues in which a party admission standing alone can suffice to avoid summary judgment.").

The Court has no occasion here to push this doctrinal envelope. For purposes of this decision, the Court assumes *arguendo,* following the Second Circuit's lead, that it is possible for general causation in complex medical products liability cases to be established other than by expert evidence. And, insofar as plaintiffs here (although suggesting otherwise) do not identify any admission by Bayer that Mirena use is a cause of IIH, the Court further assumes *arguendo* that other forms of lay evidence could in theory establish general causation. The Court therefore turns to consider whether the particular evidence offered by plaintiffs—much of which the Court addressed in its *Daubert* decision—is, considered separately or together, equal to that task.

2. Previously-Excluded Testimony from Plaintiffs' Proposed Expert Witnesses Regarding the Cause of IIH

Plaintiffs first propose that although the Court has excluded their expert witnesses as to general causation and although "no definitive mechanism for PTC/IIH has been established," Pl. Mem. at 37, they can draw on aspects of their proposed experts' excluded testimony to "establish 'pieces of the larger specific causation puzzle.'" Pl. Mem. at 27 (quoting *Ferguson v. Riverside Sch. Dist. No. 416*, No. CS-00-0097-FVS, 2002 WL 34355958, at *3 (E.D. Wash. Feb.6, 2002) (internal alteration omitted)). Plaintiffs urge that a lay factfinder could, by connecting snippets of this excluded expert testimony, conclude that Mirena is a cause of IIH. Specifically, plaintiffs propose to resurrect aspects of the expert reports of (1) Dr. Plunkett, a pharmacologist and toxicologist, regarding the pharmacokinetics of LNG; (2) Dr. Darney, an OB/GYN, reprising the majority of his pharmacology and pharmacokinetics opinions; (3) Dr. Johanson, a neuroscientist, regarding cerebrospinal fluid regulation and the interactions of hormones in the relevant regions of the brain; and (4) "non-disclosed experts from whom th[e] Court sought background knowledge on these matters on Science Day." Pl. Mem. at 26–27. Components of this proposed testimony, plaintiffs urge, are not significantly disputed. Plaintiffs assert that a jury could find general causation by connecting and extrapolating from the disparate propositions it proposes to extract from this excluded expert testimony.

The Court, however, has excluded as unreliable plaintiffs' general causation witnesses. The Court did not carve out, and hold admissible, snippets of these experts' proposed testimony. And, even assuming *arguendo* that various scientific propositions nestled within plaintiffs' experts' reports were, largely, scientifically uncontested, the Court did not hold that these stray propositions could be revived as fodder from which a lay jury could speculate about and derive a theory of general causation. Yet plaintiffs, having failed to put forward reliable expert testimony

consistent with *Daubert*, now propose just that. They propose to put shards of its various experts' reports before the jury, to serve as the basis for a lay conclusion as to a highly complex proposition of general causation as to which no expert has yet reliably opined.

This end-run around Rule 702—and this Court's *Daubert* ruling—is unsustainable. Even assuming that some species of lay evidence (e.g., an explicit corporate admission that its product is a cause of a disease) could theoretically establish general causation, the propositions here that plaintiffs propose to use as building blocks for a lay finding as to Mirena's capacity to cause IIH are complex, scientific in nature, and highly technical. They patently require expertise to decode and apply. Unguided lay judgments about pharmacokinetics and neuroscience have no place under Rule 702. *See, e.g.*, *Wills v. Amerada Hess Corp.*, 379 F.3d 32, 46 (2d Cir. 2004) ("As we have noted, the causal link between exposure to toxins and other behavior and squamous cell carcinoma is sufficiently beyond the knowledge of the lay juror that expert testimony is required to establish causation." (citing *Claar v. Burlington N. R. Co.*, 29 F.3d 499, 504 (9th Cir. 1994))); *Schudel v. Gen. Elec. Co.*, 35 F. App'x 481, 484 (9th Cir. 2002) ("Because [plaintiff's] injuries involved obscure medical factors and laypeople could not determine the injuries' cause without resorting to speculation or conjecture, expert testimony was required to establish causation."); *Beyer v. Anchor Insulation Co*., 238 F. Supp. 3d 270, 294 (D. Conn. 2017) ("'Cases involving pharmaceuticals, toxins or medical devices involve complex questions of medical causation beyond the understanding of a lay person,' and thus expert testimony is required." (quoting *In re Baycol Prods. Litig*., 321 F. Supp. 2d 1118, 1126 (D. Minn. 2004) (internal alterations omitted))); *Lasley v. Georgetown Univ.*, 688 A.2d 1381, 1384 (D.C. 1997) ("Our rule for medically complicated cases is that proof of causation requires medical opinion testimony.").

Simply put, a jury's role is not to engage in impermissible "scientific guesswork." *Golod v. La Roche*, 964 F. Supp. 841, 861 (S.D.N.Y. 1997).

This conclusion follows especially clearly here, where plaintiffs' earlier attempts to formulate a reliable *expert* conclusion as to general causation drawing on these same (and other) propositions were rejected by the Court after a painstaking review finding serious shortcomings in each expert's methodology. At root, plaintiffs seek to exhume excluded testimony of an intrinsically expert nature and to invite a lay jury to derive from it the very proposition that the Court precluded plaintiffs' experts from offering. The Federal Rules of Evidence do not afford any charter for such a venture.

Plaintiffs' bid to establish general causation by mixing and matching from the reports of their excluded experts instead is properly viewed as, *sub silentio*, a backdoor means to revive the excluded expert analyses themselves. In its *Daubert* decision, the Court found that plaintiffs' proposed experts, notwithstanding their qualifications in their respective fields, did not articulate a methodologically rigorous and reliable theory of how Mirena causes IIH. The Court so held after performing the role that *Daubert*, applying Rule 702, envisioned for a trial court: to serve as a "gatekeep[er]" charged with "ensuring that an expert's testimony both rests on a reliable foundation and is relevant to the task at hand." *Daubert*, 509 U.S. at 597. Notably, various of these excluded witnesses proposed to find general causation based on concatenating scientific propositions—precisely the exercise plaintiffs now suggest that a jury conduct.

Plaintiffs' notion that a jury examine and draw conclusions from subsets of excluded expert testimony is all the more problematic in that the testimony on which plaintiffs now rely largely concerns biological mechanisms by which Mirena, theoretically, might cause IIH. This includes Dr. Plunkett's and Dr. Darney's pharmacology and pharmacokinetics opinions and Dr.

Johanson's opinions regarding cerebrospinal fluid regulation and the interactions of hormones in the relevant regions of the brain. Pl. Mem. at 26–27. It is hard to imagine topics and disciplines as to which a lay jury would be more in need of reliable expert guidance before it could reliably "find[] general causation more likely than not." *In re Mirena*, 713 F. App'x at 16.

One example illustrates the point. Plaintiffs envision putting before the jury portions of the opinion of Dr. Plunkett as to the pharmacokinetics of LNG. The Court has summarized this testimony, including as follows:

> Dr. Plunkett discusses the difference between "free" LNG and total LNG. She asserts that free LNG levels should be used to access a patient's exposure and response to the hormone. The vast majority of LNG in the blood stream is not "free" floating. Instead, she states, upwards of 98% of LNG is bound to plasma proteins (specifically albumin and a carrier protein called steroid hormone binding globulin). However, she states, LNG's effects are not generally created by such bound LNG. Rather, they are created by "free" LNG activating nuclear hormone receptors.

Mirena IIH/Daubert, 341 F. Supp. 3d at 254. Dr. Plunkett, the Court noted, also observed that LNG "is a progestin, which mimics the effects of progesterone. She observed that, relative to other progestins, LNG is androgenic, meaning that it can bind with androgen receptors." *Id*. In articulating an androgenic theory of causation,[3] however, Dr. Plunkett noted that discerning the

[3] Plaintiffs' mechanism experts did not agree among themselves as to the mechanism by which the LNG in Mirena purportedly causes IIH. Although not offered as a mechanism expert, Dr. Plunkett embraced the "androgen theory" of how LNG might cause IIH. *Mirena IIH/Daubert*, 341 F. Supp. 3d at 256. This theory "posits that LNG causes an increased sodium ion and water flow into the central spinal fluid, thereby increasing CSF pressure." *Id*. at 256 n.37. Dr. Johanson, one of plaintiffs' proposed mechanism experts and a proponent of the androgen theory, elaborated on this theory. He posited that

> (1) IIH is caused by an overproduction of CSF; (2) the choroid plexus produces CSF through a sodium mechanism; (3) the sodium mechanism that produces CSF is triggered by androgens binding to androgen receptors in the choroid plexus; and (4) LNG binds to those same androgen receptors, triggering the same mechanism.

mechanism accounting for the posited "pharmacological and toxicological effects of progestins like LNG is extremely complicated." *Id*. Plaintiffs' proposal to put data potentially relevant to this "extremely complicated" scientific inquiry before a jury in the absence of a reliable expert opinion, and to ask the jury to reach a conclusion from it as to general causation, is an invitation to speculation, mischief, and error. It disserves the foundational goal of the Federal Rules of Evidence: "ascertaining the truth and securing a just determination." Fed. R. Evid. 102.

A final non-starter is plaintiffs' proposal to use testimony at trial from their Science Day experts as a basis for a finding of general causation. Consistent with common practice in MDLs implicating complex medical issues, the Court set aside April 9, 2018, prior to argument on the *Daubert* motions, as a day on which scientists other than the parties' general causation experts could give the Court a tutorial on background scientific concepts. These included the nature and history of the IIH disease, the chemistry of LNG and its use in various contraceptives, and the

---

Id. at 293. In contrast, Dr. Salpietro, another proposed mechanism expert, declined to embrace this theory. *Id*. at 301; Dkt. 167-12 ("Salpietro Dep"). at 474 ("There may be several mechanisms involved in the androgenicity of Mirena, but I am not in the position [to] offer you a proper opinion [about Dr. Johanson's androgen theory] because I should read much more about this."). Dr. Salpietro posited a different causal chain:

> [M]any cases of IIH were related to the primary event of raised CSF pressure, and that this increase in pressure is caused by derangements in transport of electrolytes like sodium (Na+) or potassium (K+). . . . [Dr. Salpietro] states: Activation of the choroid plexus MRs and their downstream pathways more likely than not stimulates the generation of Na+ (sodium) /K+ (potassium)-ATPase pumps, leading to greater movement of sodium ions at the choroid plexus epithelial cells (CPEC) apical membrane into the cerebral ventricles, thereby actively creating an osmotic gradient to drive secretion of CSF.

Id. at 213. The Court noted that, although Dr. Salpietro's proposed mechanism "has similarities to the model that Dr. Johanson proposed, . . . the driver of this mechanism as posited by Dr. Salpietro is MR activation, not androgen receptor activation as posited by Dr. Johanson." *Id*. at 298.

history and operation of the Mirena IUD. Dkt. 250 (March 30, 2018 Order) ¶ 1. As directed by the Court, the tutorial by these scientists pointedly avoided issues of general causation. *See id.* ¶ 2. Even if these tutorials had been admissible,[4] these tutorials would therefore not have any bearing on that issue. To the extent that plaintiffs now envision these scientists addressing general causation at trial, the deadline for disclosing general causation experts expired in 2017, pursuant to the schedule set by the Court for resolving, at the threshold, whether there was competent evidence of general causation. *See* Dkt. 118 ("[T]he ongoing phase of discovery relating to general causation is intended to capture all general causation discovery. The Court agrees with counsel that, if plaintiffs fail to adduce evidence as to general causation sufficient to withstand the defense's anticipated *Daubert* motion, plaintiffs will not be permitted to come forward with additional evidence as to general causation.").

3. The Testimony of Bayer's Proposed Expert Witnesses

Plaintiffs next argue that "admissions" by Bayer's own experts on general causation—each of whom opined that existing studies and data do *not* supply a reliable basis on which to find Mirena's capacity to cause IIH—can satisfy their causation burden. Plaintiffs first argue that Bayer's experts provide "admissible expert testimony on the methodology that a jury would use to assess 'general causation,'" to wit, the Bradford Hill methodology which several of plaintiffs' excluded experts purported to apply. Pl. Mem. at 29. As the Court has reviewed, Bradford Hill is a methodological tool used by some epidemiologists to distinguish between causal and merely associative relationships. *See Mirena IIH/Daubert*, 341 F. Supp. 3d at 242–43. Plaintiffs argue that Bayer's experts' testimony identifying these methodological criteria

[4] By agreement of the parties and Court order, the parties' presentations on Science Day were inadmissible. March 30, 2018 Order ¶ 3.

gives the jury "all it need[s] to evaluate 'general causation.'" Pl. Mem. at 29. Plaintiffs further argue that statements made by Bayer's expert, Dr. Robert Langer, admit that Mirena can cause IIH. The Court addresses these ostensible admissions in turn.

a. Bradford Hill Factors

Plaintiffs argue that they can use the testimony of *Bayer's* proposed experts to put before the jury the factors of which the Bradford Hill epidemiological inquiry consists, and thereafter task the jury with applying and weighing those factors. The Court has summarized the Bradford Hill inquiry as follows:

> The Bradford Hill criteria derive from a 1965 lecture by a British epidemiologist and statistician, Sir Austin Bradford Hill. *See* David E. Bernstein, *The Admissibility of Scientific Evidence After Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 15 Cardozo L. Rev. 2139, 2167 (1994) ("In a celebrated lecture in 1965, Sir Austin Bradford Hill proposed nine criteria to aid scientists in deciding whether a reported association in an epidemiological study is causal."). "The Bradford Hill criteria are metrics that epidemiologists use to distinguish a causal connection from a mere association." [*In re Zoloft (Sertraline Hydrochloride) Prods. Liab. Litig.*, 858 F.3d 787, 796–800 (3d Cir. 2017)]. These criteria "start with an association demonstrated by epidemiology and then apply" eight or nine criteria to determine whether that association is causal. *In re Breast Implant Litig.*, 11 F. Supp. 2d 1217, 1234 (D. Colo. 1998).

Mirena IIH/Daubert, 341 F. Supp. 3d at 242. There are nine Bradford Hill criteria.[5]

[5] These are:

> **Statistical Association [alternatively referred to as "Strength of Association"].** There must be some degree of statistical association between a cause and its effect. A strong association (large in magnitude) is more likely to represent causation than a weak association (small in magnitude).
>
> **Temporality.** A cause must precede its effect. Strength in temporality, such as when a cause immediately precedes its effect, supports an inference of causation.
>
> **Biological Plausibility** . . . A cause and effect relationship between exposure and disease should be biologically plausible . . . with other information about the disease or harm.

Plaintiffs' suggestion that they can satisfy their burden to show general causation by identifying the Bradford Hill criteria for the jury and then inviting the jury to assess, balance, and apply these factors misunderstands the Bradford Hill methodology. The Bradford Hill factors are the province of epidemiologists. Where reliably applied by a qualified epidemiologist, they may support an expert opinion that a causal relationship exists between statistically correlated phenomena. *See In re Zoloft*, 858 F.3d at 795 ("The Bradford Hill criteria are metrics that epidemiologists use to distinguish a causal connection from a mere association."). But as the case law reflects, Bradford Hill, like other multi-factor epidemiological inquiries, is not a mere box-checking exercise. Sophisticated judgments instead must be made about the existence and probative value of each constituent scientific factor and its relationship to the others. The case law addressing Bradford Hill underscores the considerable risk (inherent in a multi-factor inquiry) that this methodology will be misapplied, or applied strategically to favor a

---

> **Coherence.** A cause and effect relationship between exposure and disease should be . . . consistent with other information about the disease or harm.
>
> **Dose-Response Effect.** Causation is more likely if greater amounts of the putative cause are associated with corresponding increases in the occurrence of disease or harm.
>
> **Consistency.** When similar findings are generated by several epidemiological studies involving various investigators, causation tends to be supported.
>
> **Analogy.** Substantiation of relationships similar to the putative causal relationship increases the likelihood of causation.
>
> **Experimental Evidence.** Causation is more likely if removing the exposure in a population results in a decrease in the occurrence of disease or harm.
>
> **Specificity.** When there is but a single putative cause for the disease or harm, causation is supported.

341 F. Supp. 3d at 242 (internal footnotes and citations omitted).

predetermined outcome. As the Court therefore noted in its *Daubert* decision, where an expert fails to rigorously explain how he or she has found or weighted the Bradford Hill criteria, the criteria are rendered "virtually standardless and their applications to a particular problem can prove unacceptably manipulable. Rather than advancing the search for truth, these flexible methodologies may serve as vehicles to support a desired conclusion." *Mirena IIH/Daubert*, 341 F. Supp. 3d at 247.

As a result, even when the Bradford Hill factors are assessed by an expert epidemiologist, courts insist that the expert's application of these factors itself be "reliable according to the principles articulated in *Daubert*." *In re Zoloft*, 858 F.3d at 796; *see id.* ("An expert can theoretically assign the most weight to only a few factors, or draw conclusions about one factor based on a particular combination of evidence. The specific way an expert conducts such an analysis must be reliable; all of the relevant evidence must be gathered, and the assessment or weighing of that evidence must not be arbitrary, but must itself be based on methods of science." (internal quotation marks omitted)).

The Third Circuit has emphasized the need for such methodological rigor: "To ensure that the Bradford Hill/weight of the evidence criteria is truly a methodology, rather than a mere conclusion-oriented selection process . . . there must be a scientific method of weighting that is used and explained." *In re Zoloft*, 858 F.3d at 796 (internal quotation marks omitted); *Magistrini v. One Hour Martinizing Dry Cleaning*, 180 F. Supp. 2d 584, 607 (D.N.J. 2002) (same), *aff'd*, 68 F. App'x 356 (3d Cir. 2003). So, too, has the First Circuit. It has required that, in analyzing the Bradford Hill factors, the expert must employ "the 'same level of intellectual rigor' that he employs in his academic work." *Milward v. Acuity Specialty Prods. Grp., Inc.*, 639 F.3d 11, 26 (1st Cir. 2011) (quoting *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 152 (1999)). In her

Daubert decision in the earlier Mirena MDL, Judge Seibel similarly emphasized the need for rigorous methodology in applying the Bradford Hill criteria, lest the expert use the criteria to "reverse-engineer[] a theory to fit the desired outcome." *Mirena Perforation/Daubert*, 169 F. Supp. 3d at 430.

This Court's *Daubert* decision in this MDL, too, canvassed the uniform case law calling for analytically disciplined applications of Bradford Hill. *See, e.g.*, 341 F. Supp. 3d at 247. The Court then excluded the testimony of three of plaintiffs' proposed expert witnesses—Drs. Moyé, Plunkett, and Wheeler—whose opinions as to general causation wholly or partly were based on Bradford Hill. These experts' reports, the Court explained, had errantly assessed individual Bradford Hill factors and also their interplay, and had thereby deviated from rigorous scientific methodology. These experts' problematic applications of the Bradford Hill criteria supply an excellent illustration of the capacity that these criteria have for being unreliably applied, the need for them instead to be applied with scholarly care, and the patent unsuitability of plaintiffs' proposal that the application of the nine Bradford Hill factors be delegated to lay jurors.

Dr. Moyé, for instance, purported to apply the Bradford Hill factors and found, explicitly or implicitly, that each of the nine was satisfied. On that basis, he opined that use of the Mirena IUD can cause IIH. *See id*. at 243–47. But, the Court explained, Dr. Moyé's assessment of the factors was "flawed by serious methodological deficiencies." *Id*. at 247. These included "an unweighted and unmoored application of the nine Bradford Hill factors, a failure to consider known contrary evidence, a contravention of principles which Dr. Moyé has acknowledged should guide an epidemiologist's inquiry, a selective use of case report data, a lack of qualification to opine on biological mechanisms by which Mirena might cause IIH, and the citation of the Valenzuela study for propositions that it did not find." *Id*.

As for Dr. Plunkett, she reviewed each factor in isolation and "opine[d] or (where unable or unwilling expressly to so state) implie[d] that each has been satisfied." *Id*. at 257–58. But she failed to "explain the weights she places on the various Bradford Hill factors," and displayed a "methodological lack of rigor" in her treatment of individual factors *Id*. at 260. Among other deficiencies, Dr. Plunkett relied on the Etminan 2015 study to support her finding of a significant statistical association between Mirena usage and IIH, notwithstanding Dr. Etminan's explicit repudiation of the key findings of his study. And Dr. Plunkett found the factor of analogy met by likening Mirena to Norplant, notwithstanding that Norplant, a different contraceptive device, has not been shown to cause IIH. *Id*. at 258–60.

Dr. Wheeler, too, opined that a Bradford Hill analysis revealed that Mirena causes IIH. To support his application of the Bradford Hill criteria, Dr. Wheeler relied principally on "(1) a dataset of 115 case reports drawn from Bayer's 2015 signal investigation in which patients were diagnosed with IIH after having had Mirena inserted, and (2) the Valenzuela study." *Id*. at 263. Dr. Wheeler's application of Bradford Hill suffered from similar flaws to those of Drs. Moyé and Plunkett, plus flaws unique to his analysis. Most significantly, Dr. Wheeler's use of Bradford Hill was "fatally compromised, at the threshold, by a concession he made at his deposition": that "there is no statistical association between Mirena and IIH." *Id*. at 265. As Dr. Wheeler admitted, the Valenzuela study, "the only study in which an epidemiological relationship between LNG and IIH was demonstrated and not later withdrawn . . . does not provide evidence of association." *Id.* at 266. This concession fatally undermined Dr. Wheeler's conclusion that Bradford Hill supported a finding of general causation, because the Bradford Hill criteria are "a methodology for evaluating whether a demonstrated epidemiological association is, or is not

causal, [and] absent such a[] [statistical] association, there is no basis to apply the Bradford Hill criteria." *Id*. at 265.

A lay jury without a grounding in science or epidemiology, notified of the nine Bradford Hill factors and invited to assess and weigh these scientific factors, could easily make similar methodological errors—or ones far more egregious. Plaintiffs' notion that a jury, taught by Bayer's experts what the nine criteria are, could then reliably apply them badly misapprehends—indeed, it trivializes—this mode of epidemiological inquiry. If qualified expert epidemiologists can misapply the Bradford Hill factors, a lay jury certainly cannot be counted on to individually evaluate and collectively weigh these factors in a suitably scientifically rigorous manner, one that avoids the risk of conflating correlation with causation. Notably, plaintiffs do not supply any examples in which any court has permitted the delegation to a lay audience of the application of a complex epidemiological methodology such as Bradford Hill. The *Daubert* standard, requiring that inherently expert analyses be conducted with due rigor by qualified experts as determined in advance by a trial judge, does not countenance this approach.

b. Testimony from Bayer's Expert Dr. Langer Regarding Causation

Plaintiffs next cast a Bayer epidemiological expert, Dr. Robert Langer, as supporting their thesis of general causation. Dr. Langer, plaintiffs represent, "opines that the adverse event reporting rates for Mirena and [IIH] are consistent with a causal association." Pl. Mem. at 34 (internal capitalization and quotation marks omitted).

Plaintiffs misleadingly portray Dr. Langer's testimony. Far from concluding that Mirena is a cause of IIH, Dr. Langer opined, *inter alia*, that Mirena is a safe contraceptive device that is the preferred option for overweight and obese women. Dkt. 127-1 ("Langer Rpt.") at 2–3, 9–12. Dr. Langer further opined that IIH is strongly associated with excess weight and that it has

become more prevalent since the 1980s as female obesity rates have increased. *Id*. at 11–19. Dr. Langer pointedly criticized the methodology of plaintiffs' epidemiology expert, Dr. Moyé, opining that Dr. Moyé ignores existing literature citing body weight as a strong and consistent predictor of IIH, selectively cites literature regarding IIH incidence rates, erroneously relies on the Valenzuela study, and ignores evidence that other products with much higher LNG exposure have no known association with IIH. *Id.* at 43–50.

In painting Dr. Langer as supporting their thesis of general causation, plaintiffs seize on a small portion of his deposition, in which plaintiffs' counsel questioned Dr. Langer about Bayer's adverse events database[6] and about the methods for performing a "disproportionality analysis," *i.e.*, assessing the extent to which there are a disproportionate number of adverse events in that database associated with IIH for women using Mirena. Plaintiffs' counsel asked whether a "proportional recording ratio" ("PRR") "greater than 40 would suggest or be supportive of causal association." Dkt. 171-2 ("Langer Dep.") at 18. In response to this proffered PRR figure, and over an objection that the proffered figure was hypothetical, Dr. Langer responded, "it would not

[6] To the extent that plaintiffs seek now to rely on Bayer's adverse event report database itself as a substitute means of establishing general causation, that bid also fails. The Court noted the limits of the reports in Bayer's database. Indeed, the Court noted, one expert's reliance on such reports was "an unusually good illustration why the case law . . . has hesitated to base findings of causation or even epidemiological association on adverse event data." *Mirena IIH/Daubert*, 341 F. Supp. 3d at 267 (citing *Mirena Perforation/SJ*, 202 F. Supp. 3d at 304 ("Case reports are not reliable evidence of causation."); *McClain*, 401 F.3d at 1250 (noting that "reports reflect complaints called in by product consumers without any medical controls or scientific assessment"); *In re Accutane Prods. Liab*., 511 F. Supp. 2d 1288, 1298 (M.D. Fla. 2007) ("[Adverse event] reports are unreliable as proof of causation because, in general, the events were not observed in such a way as to rule out coincidence or other potential causes."); *Cloud v. Pfizer, Inc*., 198 F. Supp. 2d 1118, 1138 (D. Ariz. 2001) ("[I]ndividual case reports and retrospective medical articles summarizing individual case reports are not an adequate basis from which a jury could conclude that Zoloft causes suicide.")). Bayer's adverse event database is of particularly limited value in assessing general causation because it includes reports not filed by a medical professional, and many reports generated by the filing of this highly-publicized lawsuit against Bayer. *Id*.

be anything near sufficient evidence for a causal association. It would be one of the triggers to look for additional supporting evidence." *Id*. Plaintiffs' counsel then clarified, "I don't mean on its own. I mean when you're looking at the totality of the evidence, and if you added to that a PRR greater than 40, would that be supportive of finding a causal association, or would it have no effect, or would it be opposing finding a causal association?" *Id*. at 188–89. Dr. Langer replied, "[i]t would be consistent, but it would really only serve as a starting point to look for evidence from much cleaner study designs." *Id*. at 189. And when asked about a hypothetical figure for use in a second method of analyzing disproportionality, Dr. Langer reiterated, "in these hypothetical numbers that you're throwing out here, they would be consistent with a causal association. They would not be any major element of evidence absent more appropriate study designs to assess the question of causation." *Id*.

Plaintiffs seize on a single line in Dr. Langer's deposition testimony, in which he stated that certain hypothesized adverse reporting rates would be "consistent" with a causal association. *Id*. Plaintiffs claim that this statement is sufficient record evidence of general causation. But, when read in context, it is clear that Dr. Langer's statement does nothing of the sort. Dr. Langer was explicit that the hypothesized reporting rates would not permit the conclusion that Mirena caused IIH. To the contrary, he testified that the hypothesized reporting rates for Mirena "would not be anything near sufficient evidence for a causal association," and such rates would, at most, "serve as a starting point to look for evidence from much cleaner design studies." *Id*. at 188–89. In any event, even if plaintiffs' characterization of this excerpt were fair—and it is not—Dr. Langer's statement that hypothetical reporting rates could be "consistent" with a causal association at most supports the bare *possibility* of general causation. That falls far short of what is necessary for plaintiffs to sustain their burden on this element. Rather, as the Second Circuit

observed in the preceding MDL, "acknowledgment of the possibility of causation does not establish that causation is more likely than not." *In re Mirena IUD Prods. Liab. Litig.*, 713 F. App'x at 16.

4. The Valenzuela Study

Next, plaintiffs argue that the Valenzuela study evidences a "statistically significant association between a patient's use of an LNG-releasing IUD and the patient having [IIH]." Pl. Mem. at 31. Valenzuela, plaintiffs contend, supplies a basis on which a jury could find general causation, such that the issue of general causation must proceed to a jury.

This argument fails. Plaintiffs wrongly portray the Valenzuela study as if it were affirmative evidence of general causation, when in fact the study stopped well short of drawing such a conclusion. The Court considered the Valenzuela study at length in its *Mirena IIH/Daubert* opinion, summarizing its design and objective as follows:

> The Valenzuela study was published in 2017. *See* Reuben M. Valenzuela, et al., *An estimation of the risk of pseudotumor cerebri among users of the levonorgestrel intrauterine device*, 41 Neuro-Ophthalmology 192 (2017) (Dkt. 167-64) ("Valenzuela" or the "Valenzuela study"). A retrospective case-control study, it addressed the risk of IIH among certain patients in Utah and Denmark.
>
> In particular, the study examined whether IIH patients in these populations were using LNG-releasing IUDs (principally Mirena), whether the use of such IUDs was associated with an increased risk of IIH, and whether IIH patients who used such IUDs had signs or symptoms different from those observed in IIH patients who did not use such IUDs. *Id.* at 1–2. Towards this end, the study compared the incidence of IIH among reproductive age women who used LNG-releasing IUDs with the incidence of IIH among reproductive age women who were not using LNG-releasing IUDs. *Id.* at 2.

Mirena IIH/Daubert, 341 F. Supp. 3d at 233. As the Court observed, "[t]he Valenzuela study found a statistically significant correlation between a patient's use of an LNG-releasing IUD and the patient's having IIH. However, Valenzuela's authors emphasized that they had not found

causation of IIH by use of an IUD, but merely a correlation between the two." *Id*. Rather, the authors of the Valenzuela study emphasized that their investigation

> does *not* indicate that an LNG-IU[D] [such as Mirena] can cause PTC, and the number of women with an LNG-IU[D] was too small to determine if an LNG-IU[D] is an *independent* risk factor for PTC. Although use of an LNG-IU[D] seems [to] be associated with an increased risk of PTC, it is possible that this observation occurred because use of an LNG-IU[D] is also associated with other established risk factors that are known to be associated with PTC (e.g., obesity and recent weight gain). This analysis was also limited by the lack of temporal data to confirm that exposure to LNG-IU[D] occurred prior to PTC symptom onset or diagnosis.

Id. at 234 (quoting Valenzuela at 4) (emphasis in Valenzuela; other alterations in *Mirena IIH/Daubert*).

The Valenzuela study noted two possible explanations for the correlation between IIH and use of LNG-based IUDs. One "is that LNG causes increased intracranial pressure, through an as-yet undetermined biological mechanism." *Id.* The other

> is that LNG does not cause increased intracranial hypertension, but that the PTC is more likely to occur in the same population of women who are more likely to have an LNG-IU[D] recommended to them by their physician. LNG-IU[D] is often, although not exclusively, recommended for women who may have difficulty with other forms of contraception. For instance, women with obesity, headache, and/or polycystic ovarian syndrome are more likely to be intolerant to oral contraceptives. For this group of women, LNG-IU[D] may be better tolerated as a form of contraception. This same group of women, with obesity, headache, and polycystic ovarian syndrome, are also more likely to develop PTC. When interpreting the findings presented here, it is also important to consider that the risk analysis does not account for potential confounders.

Id. at 234 (quoting Valenzuela at 5).

Several of plaintiffs' proposed experts relied in part on the Valenzuela study to support their conclusion that Mirena can cause IIH. But, as the Court's discussion of the study in *Mirena IIH/Daubert* emphasized, the Valenzuela study "pointedly *disclaimed* any finding that Mirena causes IIH, on account of confounding risk factors prevalent among the dominant population of Mirena users." 341 F. Supp. 3d at 250. Although the study found a correlation between Mirena

and IIH, the study "does *not* indicate that an LNG-IU[D] [such as Mirena] can cause [IIH], and the number of women with an LNG-IU[D] was too small to determine if an LNG-IU[D] is an *independent* risk factor for [IIH]. Valenzuela at 4. Indeed, the Valenzuela study acknowledged its own limitations. Most significantly, it qualified its findings by stating that it "does not account for potential confounders." *Id*. at 5.

In light of the fact that the Valenzuela study, by its own account, did not control for the significant potentially confounding IIH risk factors of obesity and recent weight gain, and in light of the fact that the study explicitly disclaimed any finding that Mirena caused IIH, the Court emphasized that the Valenzuela study showed nothing more than a correlation, subject to identifiable confounders, between Mirena and IIH.[7] Accordingly, the Court held, the study was insufficient to support an expert conclusion that Mirena causes IIH, and could not be relied on as proof of general causation by an expert witness. While the Valenzuela study could serve as a starting point for an expert probe into general causation, its observation of a statistical

[7] In opposing summary judgment, plaintiffs seek to undermine the Valenzuela study's important qualification that it does not assess confounding factors—notably, the possibility that Mirena is preferentially prescribed to overweight or obese women, and that a patient's weight may be a confounding factor when assessing the patient's risk of developing IIH. They note that certain of Bayer's experts disclaimed knowledge whether such preferential prescribing practices exist. Pl. Mem. at 32–33. This argument is quickly interred. Whether or not Bayer's proposed experts are aware of preferential prescription practices is irrelevant to the Valenzuela study's vital caveat that potential confounding factors limit its conclusion that an association, as opposed to a causal link, exists between Mirena use and IIH. In any event, plaintiffs' portrayal of Bayer's proposed experts as professing wholesale ignorance on this point misstates the record. While one such expert, Dr. Langer, testified that he did not know the "national data" of Mirena users who are overweight or obese, either in the United States or in Denmark, he also testified that "[w]e know from a number of studies that there's a strong precedent for Mirena among heavier women." Langer Dep. at 27. Several of plaintiffs' own proposed experts agreed that there is evidence that Mirena is preferentially prescribed to overweight or obese women. *See, e.g.*, Dkt. 167-14 ("Wheeler Dep.") at 233 ("Q: You would expect compared to other forms of prescription contraceptives, obese women are preferentially prescribed Mirena? A: Yes, you would see Mirena over—overrepresented in that group.")

association merely identified, rather than answered, the question of whether Mirena causes IIH. *See Mirena IIH/Daubert*, 341 F. Supp. 3d at 250.

Under these circumstances, the Court reads plaintiffs' bid now to empower the jury on its own to review the Valenzuela study and to treat it as a basis on which to find general causation as a *sub silentio* attempt to repudiate the Court's *Daubert* ruling. But plaintiffs do not offer any basis to understand the Valenzuela study any differently than as presented in the *Daubert* ruling: as finding an association between the use of Mirena and IIH, but as reaching no conclusion as to whether Mirena *causes* IIH. Plaintiffs are therefore wrong that the Valenzuela study, if put before the jury, would give rise to a material dispute of fact on the issue of general causation, warranting denial of summary judgment.

5. Bayer's Purported Admissions

Plaintiffs next argue that the scenario identified by the Second Circuit and other courts, in which a corporate defendant's admission might qualify as sufficient evidence to establish general causation, applies here, to wit, that admissions by Bayer give rise to a permissible inference that Mirena can cause IIH. In making this argument, plaintiffs must clear a meaningful bar: Courts have cautioned that *if* there were cases in which complex general causation issues could be proved by corporate admissions, such cases would be "rare indeed." *In re Lipitor*, 892 F.3d at 647. As Judge Seibel has put the point, for corporate admissions to substitute for expert testimony in a case involving medical causation issues, such admissions "would have to be clear, unambiguous, and concrete, rather than an invitation to the jury to speculate as to their meaning." *Mirena Perforation/SJ*, 202 F. Supp. 3d at 315. To adequately substitute for competent expert testimony on general causation such admissions would have to be "comparable to expert testimony in terms of reliability" and "provid[e] the jury with a scientific, non-speculative basis

to assess general causation." *Id*. at 320; *see also In re: Benicar (Olmesartan) Prods. Liab. Litig.*, No. 15-2606 (RBK/JS), 2016 WL 6652358, at *3 (D.N.J. Nov. 9, 2016) ("Unless information characterized by plaintiffs as defendants' admissions provide to the jury evidence that is clear, unambiguous, and concrete and suffices to prove general causation without the jury's speculation as to complex medical issues, then such information does not substitute for *Daubert*-admissible expert testimony of general causation.").

Here, plaintiffs argue that a string of propositions to which Bayer (or its experts) has ostensibly admitted connect syllogistically to an admission to a biomechanical chain of causation under which Mirena causes IIH. Plaintiffs summarize these as follows:

> [T]he Court must accept [that] LNG is a reproductive hormone, reproductive hormones are linked with [IIH], [IIH] can be induced by medications, CSF is produced by the choroid plexus, peer-reviewed literature includes mechanism of PTC involving CSF, LNG reaches the brain, crosses the blood-brain and blood-CSF barriers, is capable of causing changes in the brain, is capable of engaging reproductive hormone receptors for androgens, is capable of causing reproductive hormone side effects, is capable of binding to mineralocorticoid receptors, and that peer-reviewed literature recognizes a potential link between those same receptors, in the same region of the brain (the choroid plexus), and causing [IIH].

Pl. Mem. at 37–38.

This concatenation of scientific propositions from which plaintiffs construct a causal chain falls far short of a "clear, unambiguous, and concrete" corporate admission of general causation, *Mirena Perforation/SJ*, 202 F. Supp. 3d at 315, so as to be comparable to admissible expert testimony in terms of reliability. Plaintiffs do not point to any statement by Bayer admitting general causation, or anything close to it. Quite the contrary, Bayer, in this litigation, consistently has disputed Mirena's causation of IIH. And the biomechanical chain that plaintiffs posit is subject to debate and challenge—as this Court's *Daubert* analysis of plaintiffs' three

proposed "mechanism" experts underscores. *See Mirena IIH/Daubert*, 341 F. Supp. 3d at 284–89 (Dr. Darney); 292–97 (Dr. Johanson); 300–05 (Dr. Salpietro).

In any event, in asking that the jury stitch the above propositions together to find general causation, plaintiffs gloss over Bayer's dispute as to certain of the component points and as to the bottom line conclusion. To choose one example, although LNG is known to bond with mineralocorticoid receptors ("MR"), as plaintiffs note, it is disputed whether LNG is an MR agonist (meaning it binds to receptors and activates them) or antagonist (meaning it binds to receptors and blocks them). One of plaintiffs' excluded mechanism experts, Dr. Salpietro, opined that "[a]ctivation of the choroid plexus MRs and their downstream pathways more likely than not stimulates the generation of Na+ (sodium) / K+ (potassium)-ATPase pumps, leading to greater movement of sodium ions at the choroid plexus epithelial cells (CPEC) apical membrane into the cerebral ventricles, thereby actively creating an osmotic gradient to drive secretion of CSF." Dkt. 98-11 ("Salpietro Rpt.") at 17. His model of causation, therefore, depended on LNG being an MR agonist, because the model was based on "activation of the choroid plexus MRs." *Id*. Plaintiffs do not, however, identify any instance in which Bayer itself ever admitted this point. On the contrary, Bayer, successfully challenged Dr. Salpietro's mechanism theory, built in part on this proposition, as unproven and unreliable. *Mirena IIH/Daubert*, 341 F. Supp. 3d at 302–03.

Plaintiffs' proposed causal chain of admissions therefore falls well short of the scenario that courts have posited in which a corporate admission might substitute for reliable expert evidence of general causation. Simply put, defendants have not admitted general causation. And plaintiffs' proposal that a jury reason that a series of purported admitted scientific propositions (some not squarely admitted by Bayer) ineluctably leads to the outcome of general causation

(very much disputed by Bayer) is not viable. Like other of plaintiffs' proposals for establishing general causation without expert evidence, it would ultimately task a lay factfinder with an assignment well beyond its competence to resolve unaided and invite impermissible conjecture and unscientific guesswork.

6. Regulatory History of Other Products Containing LNG

Plaintiffs next argue that the FDA has concluded that LNG can cause IIH, and this conclusion gives rise to a genuine dispute on the material fact of general causation. Pl. Mem. at 39. To support this claim, plaintiffs point to an FDA warning approved in connection with a separate LNG-based contraceptive product, Jadelle.

As the Court reviewed in its *Daubert* ruling, Jadelle is a contraceptive implant inserted beneath the skin and placed in the arm. It is the successor product to a product called Norplant, which between 1991 and 2002 was marketed in the United States; Jadelle is currently sold in Europe. *Mirena IIH/Daubert*, 341 F. Supp. 3d at 222, 237. Jadelle bears the following warning: "[IIH] has been reported on rare occasions in users of levonorgestrel implants. Consider this diagnosis if persistent headache and or visual disturbances occur in a woman with JADELLE, particularly if the patient is obese or has recently gained weight. Remove JADELLE if [IIH] is diagnosed." Dkt. 331-12 ("Jadelle Label") § 5.9. The Jadelle label is FDA approved, although the product has not been distributed in the United States. Relying on this warning, plaintiffs argue that the FDA has necessarily determined that LNG is capable of causing IIH, and that a jury could find, based on the FDA's such finding, that Mirena, which also utilizes LNG as its hormonal component, can cause IIH. Pl. Mem. at 41.

For multiple reasons, plaintiffs' reliance on the Jadelle label is misplaced. First, plaintiffs wrongly equate Jadelle with Mirena. But the fact that Jadelle contains LNG does not establish it

as tantamount to Mirena. Jadelle is a subdermal implant, unlike Mirena, which is inserted into the uterus. And Jadelle produces substantially higher systemic levels of LNG than Mirena. *Compare* Dkt. 135-6 ("Mirena Label") § 11.1 (total implanted dose of 52 mg) *with* Jadelle Label at § 2.1 (total implanted dose of 150 mg).

Moreover, Jadelle's label quite clearly does *not* reflect a determination by the FDA that LNG causes IIH. The warning states only that "[IIH] has been reported on rare occasions in users of [LNG] implants." The label encourages women using Jadelle and experiencing IIH symptoms to consider these reports, and directs Jadelle users to discontinue using Jadelle if IIH is diagnosed. *See* Jadelle Label § 5.9. This Court in its *Daubert* ruling addressed an analogous argument by one of plaintiffs' experts that the Jadelle label, and a similar label on Norplant, another LNG-releasing contraceptive device, revealed a determination of general causation. Rejecting as baseless the claim that the "Jadelle and Norplant labels bespeak a predicate finding of causation," the Court wrote, "on their face, these labels . . . establish nothing of the kind." 341 F. Supp. 3d at 270. Rather, as the Court observed, these warning labels "reveal[] only the existence of historical case reports. . . . Absent a factual basis to assume that the manufacturer's decision to include the Norplant or Jadelle labels reflected evidence bearing on causation—as opposed to a prudent means of guarding against legal risk by a manufacturer alerted to case reports"—there was no basis for plaintiffs' proposed expert to "rely on these labels as supporting [a] finding of causation." *Id*. That the Jadelle label describes—accurately—the fact of "rare" reports of IIH by Jadelle users simply does not address, let alone reflect a FDA finding on, the issue of causation.

In any event, even if the Jadelle label could be read to reflect an FDA determination of Jadelle's or LNG's capacity to cause IIH—and it clearly cannot—"[i]t is widely recognized that,

when evaluating pharmaceutical drugs, the FDA often uses a different standard than a court does to evaluate evidence of causation in a products liability action. Entrusted with the responsibility of protecting the public from dangerous drugs, the FDA . . . may choose to err on the side of caution and take regulatory action such as revising a product label . . . upon a lesser showing of harm to the public than the preponderance-of-the-evidence or more-like[ly]-than-not standard used to assess tort liability." *In re Neurontin Mktg., Sales Practices, & Prods. Liab. Litig.*, 612 F. Supp. 2d 116, 136 (D. Mass. 2009) (internal quotation marks and citations omitted); *see also, e.g.*, *Glastetter v. Novartis Pharma Corp.*, 252 F.3d 986, 991 ("The FDA will remove drugs from the marketplace upon a lesser showing of harm . . . . The methodology employed by a government agency results from the preventative perspective that the agencies adopt in order to reduce public exposure to harmful substances." (internal quotations marks omitted)). For this reason, the Jadelle warning alone, even if it had reported an FDA finding as to that product's capacity to cause IIH, would be "unreliable proof of medical causation . . . because the FDA employs a reduced standard (vis-à-vis tort liability) for gauging causation." *Glastetter*, 252 F.3d at 991.

7. Overall Assessment of Plaintiffs' Evidence of General Causation

For the reasons above, the items on which plaintiffs rely—following exclusion of their expert witnesses—to establish Mirena's causation of IIH do not do so. None comes remotely close. The Court has separately considered whether this result is different considering these pieces in combination. It is not. Viewing plaintiffs' proffered evidence separately and together, plaintiffs have not come forward with sufficient reliable, non-speculative evidence from which a reasonable factfinder could determine, by a preponderance of the evidence, that Mirena caused plaintiffs' injuries.

D. The Court's November 19, 2018 Order Did Not Alter the Summary Judgment Standard.

Plaintiffs next argue that entry of summary judgment is improper because the Court erred in directing plaintiffs, in advance of Bayer's filing of its summary judgment motion, informally to identify the purported admissions by Bayer on which plaintiffs anticipated relying. That argument also fails.

On October 24, 2018, after issuing its *Daubert* opinion, the Court directed the parties to meet and confer as to next steps in this litigation. Dkt. 321. On November 9, 2018, the parties filed a joint letter setting forth their views. Plaintiffs asked the Court to certify its *Daubert* ruling for an interlocutory appeal, whereas Bayer argued that the case should proceed to a defense motion for summary judgment on the issue of general causation, as had the Mirena Perforation litigation after Judge Seibel excluded plaintiffs' expert witnesses on that point. Dkt. 322. The Court agreed with Bayer's proposed course as the most efficient, and directed the parties to jointly propose a briefing schedule. Dkt. 323.

On November 16, 2018, the parties submitted a proposed schedule, but stated that they disagreed as to page lengths. Based on plaintiffs' representation that they intended to oppose summary judgment by relying on purported admissions of general causation, Bayer sought an enlargement of its reply brief to address those admissions. Dkt. 324. Bayer noted that in the Perforation MDL, the plaintiffs had agreed to set out the alleged corporate admissions of causation in a letter to the Court, whereas plaintiffs in this case had declined to do so. This, Bayer argued, made it hard for Bayer's opening brief in support of summary judgment to anticipate plaintiffs' concrete bases for asserting that Bayer had admitted general causation, and justified an expanded reply to accommodate purported admissions that plaintiffs' opposition brief had revealed. *Id*. at 2–3.

To facilitate informed and efficient briefing, the Court, on November 19, 2018, directed plaintiffs' counsel to submit a letter previewing the admissions on which it then intended to rely in opposing Bayer's motion for summary judgment. Dkt. 325. The Court emphasized, however, that while it expected plaintiffs to make a good-faith effort to disclose the specific evidence on which they expected to rely in claiming corporate admissions, plaintiffs' letter to this effect "will not limit the range of materials on which plaintiffs may rely in their briefing." *Id*. Plaintiffs' counsel thereafter filed such letter, while protesting that the Court's order "turns the summary judgment standard on its head." Dkt. 326.

Plaintiffs are wrong. The Court's approach of attempting informally to identify early the evidence on which a motion for summary judgment would most likely turn was modeled on the Mirena Perforation MDL. This approach did not in any respect relieve Bayer of its burden, as movant, to demonstrate the absence of a question of material fact. It served merely to assure orderly briefing, by enabling the Court to receive, in Bayer's opening brief, a fuller and more informed discussion of the evidence on which plaintiffs expected to rely in opposing summary judgment. The Court's Order did not limit the universe of materials on which plaintiffs were thereafter permitted to rely in opposing Bayer's motion. Plaintiffs cite no authority that this sensible case-management device infringed any legal right of theirs.

E. The Seventh Amendment and Summary Judgment

In a final argument, plaintiffs argue that granting Bayer summary judgment would be unconstitutional. Such an order, plaintiffs claim, would violate the Seventh Amendment right to a jury trial in cases in which the value in controversy exceeds $20. Although plaintiffs appear to suggest that summary judgment is inherently unconstitutional, *see* Pl. Mem. at 44, they state that they are not seeking a global ruling that "summary judgment is unconstitutional in all cases," *id*.

at 45. Rather, plaintiffs argue, this case is distinct because Bayer's motion was made after the close of discovery as to general causation, but before plaintiff-specific discovery. *Id.*

This argument is easily dispatched. It is long established that "summary judgment does not violate the Seventh Amendment." *Parklane Hosiery Co., Inc. v. Shore*, 439 U.S. 322, 336 (1979) (citing *Fidelity & Deposit Co. v. United States*, 187 U.S. 315, 319–21 (1902)). This result is not changed by the Court's decision to stage discovery, consistent with the guidance of the JPML, so as to front-load discovery on the potentially dispositive issue of general causation. The alternative—in which summary judgment motions practice on this global issue would have been deferred until fact and expert discovery as to the facts and circumstances attendant to each of the approximately 920 plaintiffs in this MDL—would have consumed enormous resources of the parties, without adding to the pool of evidence adduced here on the gateway issue of general causation. Plaintiffs have not identified any authority to the effect that staging discovery to permit efficient summary judgment motions practice on a potentially dispositive threshold issue abridges a party's Seventh Amendment rights.

Nor, to the extent plaintiffs imply that the Court has made a factual determination that LNG could not have caused plaintiffs' IIH, has the Court done so. Rather, the Court held in its *Daubert* ruling, as a legal matter, that plaintiffs' experts have failed to offer reliable, admissible testimony of general causation, consistent with *Daubert*. And the Court now holds, also as a legal matter, that the remaining evidence also fails to supply a basis on which a jury could reliably find the required element of general causation. In the absence of a genuine dispute of material fact as to causation, summary judgment is appropriate. *See McClamrock v. Eli Lilly & Co.*, 504 F. App'x 3, 4 (2d Cir. 2012) ("[The] Seventh Amendment right to a jury trial . . . is not

violated by an award of summary judgment where, as here, there are no disputed issues of material fact.").

CONCLUSION

For the reasons stated above, Bayer's motion for summary judgment is granted. The Clerk of Court is respectfully directed to terminate the pending motion (No. 17 MD 2767, Dkt. 328), and to enter judgment in and close all remaining member cases in this MDL.

SO ORDERED.

Paul A. Engelmayer

PAUL A. ENGELMAYER
United States District Judge

Dated: June 11, 2019
New York, New York